School Health Education

HARPER'S SERIES IN
SCHOOL AND PUBLIC HEALTH EDUCATION,
PHYSICAL EDUCATION, AND RECREATION.

Delbert Oberteuffer, Editor

SCHOOL HEALTH EDUCATION

A Textbook for Teachers, Nurses, and Other Professional Personnel

THIRD EDITION

Delbert Oberteuffer, Ph.D.

The Ohio State University

ANDRA STATE CENTRAL LIBRARY
24107
AGARTALA, TRIPURA

HARPER & BROTHERS, NEW YORK

CENTRE
483
AGARTALA, TRIPURA

Library of Congress catalog card number: 60-11612

To Ted

Contents

Foreword to the Third Edition xi

PART I

FOUNDATIONS OF SCHOOL HEALTH EDUCATION

1. *Health in Education* 3
The Development of Science—The Functions of School Health Education—Individual and Group Needs—The Extension of the Responsibilities to Community Life—The Nature of a Modern Program.

2. *Basic Problems Confronting Schools* 14
Health Status of the Population—The Problems of Health—Particular Problems of the School Population—Forces Creating and Relieving these Problems—Science and Education as Favorable Forces—A Definition of Health.

PART II

THE CURRICULUM AND TEACHING

3. *Planning for Effective Teaching* 51
Fundamental Considerations in Planning—Needs, Interests, and Problems—More About Motivation—The Aim of Health Instruction.

4. *Organizing for Learning* 78
Definitions—Selection and Arrangement for Teaching—Testing

for Cruciality—Selecting the Problem—Organizing for Learning—The Scope of the Curriculum—Transition.

5. *The Specific Course* 122
Characteristics of a Good Course—The Range of Material—Class Composition—Special Considerations—Summary.

6. *Correlation* 175
Potential Relationships to Health Education—Possibilities and Limitations—Administration.

7. *Integration* 192
Integration and the Individual—The Integrating Experience—Integration and the Specific Course—Integration and the Curriculum—Integrating the Program—Conclusion.

8. *Teacher Preparation and Resources* 233
In-Service Preparation—Selected Resources for Teachers and Others.

9. *Evaluation of Instruction* 253
Methods of Evaluation—Evaluating the Program—Summary of Evaluation of Instruction.

PART III

ADMINISTRATION, SERVICES, AND ENVIRONMENT

10. *Scope and Appraisals* 279
The Scope of the Program—The First Step: Appraisal—Kinds of Appraisals—Conditions Basic to the Success of Appraisals.

11. *School Controls for Disease* 323
Basic Policies for Control—Specific Procedures in Disease Control—School Program of Control—Special Problems—The Child's Return to School.

12. *The Mental Health Program* 354
The School's Relation to Mental Health—The Acknowledgment of Variations—Well-Adjusted Teachers—Discovery and Screening—Instruction in Mental Health—Mental Health Clinics.

13. Nutrition and Dental Programs 378
The Role of the School—The Program of Instruction—School Dental Programs.

14. Programs for the Handicapped and for Vision and Hearing 398
Programs for the Handicapped—Special Provisions—Vision—Hearing.

15. The School Day 425
Important Considerations—Effect of School on Health—The Safety Program.

16. Administrative and Personnel Interrelationships 444
Some Basic Considerations—Administrative Organization—Legal Aspects—Distributions of Costs—The Health of the Teacher.

17. Relationships with Physical Education 490
Physical Education and Health—Classification for Physical Education Including Athletics—Health Permits for Competitive Sport—Problems of Schools Without a Physician—Summary.

18. School and Community Relationships 508
Relations to Parents—Relation of Schools to Physicians, Dentists, and Their Societies—Relation of Schools to Boards of Health, Clinics, and Councils—Relation of Schools to Private Agencies—Relation of Schools to Commercial Organizations—Relation of Schools to Opposition Groups—Relation of Schools to Professional Agencies.

19. The Evaluation of Services and Activities 524

Appendix A 535

Index 541

Foreword to the Third Edition

The remarkable advances in the scientific world in mid-century have left their mark upon health education as it is organized and conducted in schools. New insights into mental health, personality development, disease control, and the use of fissionable material in medicine have broadened the scope of instructional opportunities. The development of new surgical techniques, new diagnostic measures, and the slowly changing relationship between the consumer or patient and the medical and health services which are available to him are affecting practice in the school health field. The wide extension of health knowledge and services through the many international organizations and conferences have broadened the potential scope of school health education.

This Third Edition of *School Health Education* has therefore been fully revised and rewritten to embody these new concepts and practices. Like its predecessors, however, it is prepared for college and university students, including nurses and others preparing in the health sciences, who will assume responsibility in educational programs. The chapters are designed to range over the whole field of school practice involving instructional, administrative, environmental, and service aspects of a school health program; and the program is seen in relation to the community forces to which it is related.

The book is again divided into three parts—Part I "The Foundations of School Health Education" describes those problems or circumstances which give health education its roots in education. The relation of health education to general and liberal education is described, and a preliminary statement of scope, function, and content is included.

In Part II the chapters deal entirely with existing patterns of health instruction. The nature of integrated teaching, correlation, and the

direct or specific approach is illustrated. There is an extended discussion of special problems associated with teaching. Suggestions for evaluation are given.

Part III deals with health activities or services. Appraisal programs, disease controls, nutrition activities, and other functions are described. Policies for personnel and community interrelationships are developed.

New material has been added throughout. New illustrations of teaching units, integration plans, and appraisal devices have been used. New suggestions for program evaluation are included. The author continues in debt to his many professional associates for teaching him so much about coordinated and cooperative programs and to those others who have given their consent to have passages from their writings quoted in support of material here.

DELBERT OBERTEUFFER

Columbus, Ohio

PART I

THE FOUNDATIONS OF SCHOOL HEALTH EDUCATION

— 1 —

Health in Education

Western civilization embraces a firm belief in the inherent worth and dignity of the human being. In areas where such civilization is most advanced, it is coincidental that the structures and functions of school and public health education are also well developed. Wherever mankind seeks to improve the vitality of people, to liberate them from the shackles of disease and ignorance, to aid them in developing behavior which is creative rather than merely imitative, there has been a concerted effort to use science as an important asset in the effort. If life is not only to be conserved but given a chance for fullest development, and if human dignity is to be considered a goal for everyone, then whatever efforts the school may make to bring the knowledge and skillful practice of the sciences of human life to students will have a favorable bearing upon the extension of Western values.

THE DEVELOPMENT OF SCIENCE

Science is developing on all fronts. The scientist is insatiable in his search for knowledge. Whether it be in surgery, virology, electronics, low-temperature physics, or space travel, the scientist presses on to the discovery of origins, causes, and the nature of things. Man may become overwhelmed by the volume of scientific information at his disposal. He may not learn fast enough how to use science to his advantage, or perhaps even for his preservation. There are those who fear that science may destroy us for want of our understanding as to how science may be used to develop man rather than destroy him. Surely the use of atomic weapons of war for mass destruction of human life is an obvious il-

lustration. Germ warfare and the use of psychological techniques and devices in "brain washing" or mass propaganda are other examples of destructive applications. We can be ingeniously and diabolically clever in our bland use of science to support our politically aggressive purposes as one group seeks dominance over another.

The problem is not merely one of *using* science. The problem is fundamentally one of developing a synthesis of *all* sciences so as to understand nature's processes in relation to man, and then to utilize what the synthesis shows for man's development rather than his destruction.

The use of the behavioral sciences is a case in point, perhaps the most telling one. As we come to know more and more about human behavior, about the origins of motivation, fear, ambition, and man's cruelties and kindnesses, we will be able to relate them to the discovery of, say, newer techniques for mass destruction, or for disease prevention. The synthesis of the sciences will not only reveal more of each science to the other but will provide the wise person with clear guides as to how to use science for the benefit of mankind.

The Use of Science in Living

The more man can learn how to use the knowledge he has and the knowledge he is steadily accumulating from scientific investigation, the greater facility he will have in understanding and solving his problems. His worlds of economics, production, religion, homemaking, or politics will become easier to control, his objectives more easily attainable, and his life safer but more complicated. In time of war, science is a great destroyer. In time of peace, it can be a great liberator and a great protector. From the laboratories all over the world have come discoveries which have been so useful to civilization—discoveries of surgical techniques, protective vaccines, ways to preserve food, to heat houses, to purify water, to promote growth, and to do hundreds of other things. The accumulation of knowledge is massive.

But it is not sufficient that this knowledge be used merely for preventive purposes. To be free of the illnesses, disabilities, and hampering circumstances that an adverse environment all too frequently imposes upon us is a highly desirable state, of course. But man will come into his own fully, he will make the most out of his yet unplumbed potential,

when he learns to live *creatively* and *constructively.* When science can be employed to help man live *beyond* an ordinary level of effectiveness, beyond mediocrity, and on the level where he can function at his potential best, then we will have made the most of science. Until that time comes, or until the individual uses science in that way, we can say that we are living *in* a scientific age but we are not *of* it.

THE FUNCTIONS OF SCHOOL HEALTH EDUCATION

It is at this point that school health education becomes of greatest use. The fulfillment of life's broadest and best purposes assures the place of health education in the educational world. In both its protective and developmental or creative aspects, health education seeks to deal with the mechanisms of life and living through the method of intelligence. To avoid the cultivation of a blind belief in science, the teacher must educate in such a way as to convey understanding: he must stress the "why" as well as the knowledge or the device. The practical nature or value of health education as a preventive or protective device can be easily ascertained. Malaria *can* be controlled. Poliomyelitis *can* be prevented. But the distance between the discovery of the vaccine and the elimination of the disease is great, and it requires more than a superficial knowledge of immunology to close the gap if the gap involves human usage of the information. We know a great deal right now, for example, about heart disease, allergies, accidents, neuroses, the common cold, sepsis, orthopedic problems, dermatitis, and dozens of other annoying and debilitating conditions—but the application of what is known lags far behind the availability of the knowledge.

Since colonial days, when the foundations of America's great system of public education were laid, the school has been the principal means by which science has become understandable to the public. The school has become the conveyor and the interpreter. The individual himself becomes the user. The school has been the means by which its students gain an understanding of the world's great advances and the meaning and directions of culture. It is through education that the great implements of knowledge and intelligence are combined to develop the means by which man controls his environment and secures his livelihood. Without these means man might die.

We are not many centuries from the jungle. Primitive life was cheap and short. Modern man wishes to live long and well. He will do so successfully only to the extent that he learns more of the scientific nature of his world and puts into use the things he learns.

In the broadest sense much of man's scientific achievement has a bearing on his survival or his development. When his heritage is transmitted to the oncoming generations through the medium of the school, then virtually all the school's efforts, no matter in which direction, may be viewed as having a bearing on man's growth, his development, and his preservation. Hence, broadly speaking, his education in the mechanisms and purposes of living—in survival and development, in protection and in the means of utilizing best his resources—occupies much of the school's time. Health education thus conceived becomes a major function of education.

In the twentieth century these broad responsibilities have been clarified, sharpened, and reduced to organizational and curricular terms where they may be viewed and accepted. The school becomes responsible for reducing the lag in knowledge between that which is known to the scientist and that which is known by the public. Night air was known to be harmless years before there was any general acceptance of that fact by a superstitious public. Pasteur's discovery of the germ theory of disease was known to scarcely half the population a half-century after the scientists had accepted it. This lag in knowledge is costly. Education must constantly repeat over and over to the succeeding generations the knowledge available while at the same time keeping abreast of fresh discoveries.

The Ultimate Goal: Creative Vitality

The ultimate goal of health education, whether it be in the school setting or for the general public, is to liberate man's potential strengths, energies, and virtues so that his actions become deeply satisfying and humanly constructive.

Education wishes to influence favorably the lives of people, to affect their ways of doing things, to improve living over what it was in the past. It seeks constantly to show better ways of getting along, of building a heritage, of preventing sickness, or of preserving the home. It teaches with the hope that Cicero or Virgil, Pasteur or Banting, Beetho-

ven or Harris, Kettering or Edison will give in knowledge, beauty, or skill the ability for the present generation to live a better life than the generation just departing.

This educational goal particularly applies in health education. What Jenner told the world about the cowpox is important knowledge, but it is important to the individual only if he uses that knowledge to become vaccinated. What Semmelweiss told about the sanitation of the hospital ward saved the lives of thousands of mothers only when the sickroom and the surgery were made clean. What others have told us about development and metabolism and muscle becomes important only when we secure for youth an opportunity to run and climb and swim against a constantly confining and restricting sedentary world. *Action is the thing.* To live healthfully, to practice what one knows, to do the scientific thing, and to be creative—these are the principal objectives for which teaching exists. Behavior is more important than either knowledge or the elusive attitude because without the action the thought is impotent.

Obligation of the School

The school as an institution, as a confining and demanding institution receiving its pupils, by law, at the tender age of 6 must look to the quality of that experience lest it be found dangerous.

Children are required to attend school 5 or 6 hours a day, 30 weeks a year, for 12 or 16 years. No other social institution in America enjoys such a certainty of patronage. Neither church, nor hospital, nor court can be assured of eager citizens coming annually for what ministrations are traditionally given. The school, however, enjoys the benefit of compulsory attendance laws. It has at once the greatest opportunity for good and the most compelling responsibility of any of our institutions. The school has the responsibility to receive these youngsters from their homes, contribute to their development during the long hours of school, and turn them out at the end not only undamaged by the experience but better in growth and development, in spirit and in outlook, than when they came. There can be no justification for a school life which, receiving a lad wholesome and sound at 6, releases him 12 years later tuberculous *because of the school experience.* There can be no defense of a school system that is inattentive to the disturbed psychological

states of some of its employees, which produces children in their reflection—nervous, unstable, maladjusted. Society has no right to compel attendance in firetraps, or to ask that 12 years of a child's life be given to dark, dirty, or dangerous buildings. The environment of the school must be good for health, for life, not destructive of it.

The Relation to Education as a Whole

The purpose of health education, as presently organized and conducted in schools and colleges, is clear. It is directly related to the improvement of the quality of man's life. It is concerned with the human understructure upon which the whole plan for education is built. It deals less with subject matter itself than with how the student receives, assimilates, and uses *other* subject matter.

In its instructional aspects, health education attempts to bring man that information which will aid him in the control of his fundamental processes, which will relate him positively and creatively to science, and which—rather than give him a body of scientific information to memorize—will aid him to think, to reason through his many problems and the application of science to them.

Needs as a Basis

Modern health education is a product of that educational philosophy which enjoins the teacher to base the program upon human needs. Not merely needs for an impersonal knowledge of how to add a column of figures, but the total needs of man as a growing, developing, striving organism. It accepts the thesis that man is constantly trying to satisfy his needs and that which he can learn, or do, or experience in any way which aids him in that process is valuable material for the curriculum or for the school program. As one of the subcommittees of the World Health Organization put it:

> The urges to satisfy certain fundamental human needs, such as survival, food, love, and social approval, are the mainsprings of human behavior. But people strive for many other things which are no less important to them, though less vague. Their interests are seldom concerned with such abstractions as "life" and "health," but are usually more defined, e.g., striving to prevent sickness from certain diseases, or getting along with people, or overcoming some physical handicap. People are interested in doing those

things which seem to help them to achieve something they want, or to cope with their own specific personal problems.[1]

Or, more formally, Prescott reports these needs as:

(1) physiological, when describing needs that spring primarily out of structure and dynamic biochemical equilibria; (2) social or status needs, when describing the relationships that it is essential to establish with other persons in our culture; and (3) ego or integrative needs, when describing needs for experience and for the organization and symbolization of experience through which the individual will discover his role in life and learn to play it in such an effective manner as to develop a sense of worthy selfhood.[2]

Thus there need be no confusion about the purposes or direction of modern health education. It aims to improve the quality of living and it encompasses more than merely the "intellectual" aspects of life. It is more than merely classroom instruction in a "subject," and even the classroom instruction, which is an important part of modern health education, acknowledges the totality of man as a complex organism whose functions cannot be separately analyzed. Health education then becomes involved in man's adjustment to life, to the way he meets his problems, to the extension of his personality into the creative realm—and is *not* concerned solely with his "physical" processes of eating, sleeping, or preventing disease.

The General Education Program and Health Education

"While there are many confusions over exact definitions, general and liberal education are conceived as enlarged opportunity for mature personal development and for those experiences by which students gain fuller insight into the nature of man and his environment."[3]

This is the main purpose of health education—to provide an "enlarged opportunity for mature personal development" and to contribute to "a fuller insight into the nature of man and his environment." Similar defi-

[1] Expert Committee on Health Education of the Public, *First Report, World Health Organization Technical Report Series, No. 89,* Geneva, World Health Organization, October, 1954, p. 9.

[2] Daniel A. Prescott, *Emotion and the Educative Process,* chapt. VI, "Report of the Committee on the Relation of Emotion to the Educative Process," Washington, D.C., American Council on Education, 1938.

[3] Educational Policies Commission, *Higher Education in a Decade of Decision,* p. 46, 1957.

nitions from contemporary scholars and also from critics of modern educational practice all insist that schools should provide a common core of general education for all, with divergences later into "vocational" or "academic"[4] subjects in terms of the ability of the students to deal with the material. In addition to gaining competencies required to live in a modern society, the student should grow as an individual, realizing his capacities to the utmost. So continues the definition from the Educational Policies Commission, who also embrace within their scope of general education "a broadened program of health services, including required physical examinations, instruction in personal and community health problems, and a varied program of physical education, aid in detecting and correcting physical and emotional deficiencies. . . ."[5]

Thus a school program of health education that provides a variety of services from hearing and vision programs to disease control, from supervision of lunch programs to psychological counseling, from emergency and accident care programs to health appraisal devices, falls well within the scope of this program of general education. And when the instructional aspects of health education are added, including the cultivation of understandings in the broad areas of mental hygiene, marriage and heredity, disease processes and nutrition, and all the other facts of living, the program of health education becomes not merely another phase of general education but perhaps the *central* phase. Health education, above all else, makes the individual—the learner—the center of its forces. Its program is directed wholly to improvement, development, and protection of individual life. It is a very *personal* thing aimed at the wellsprings of living.

INDIVIDUAL AND GROUP NEEDS

A modern program of school health education, having its origins in the lives of people, does not spring from any preconceived notions of an academician who feels that "these things should be taught because I believe they should." No such reason is adequate. Nor does it spring

[4] The author has never found a satisfying distinction between these two terms. College physics, for example, is most always thought of as "academic" and yet it is used vocationally by probably 90 percent of college graduate students representing the highest type of scholarly approach.

[5] Educational Policies Commission, *op. cit.*, p. 46.

from the idea that if children can be given a knowledge of the structure and function of body parts they will go forth to live long and successful lives. No such position is acceptable because knowledge per se, unrelated in its selection to ongoing and recognized problems, has less relation to life than knowledge sought to answer a personal need.

School health education goes to the individual, to the family, to the group for the substance of its program. It seeks out the needs of people to satisfy, queries to answer, perplexities to solve. It anticipates problems by having the means to the solution ready. It helps the student meet his concerns as they arise. It gives him techniques for better living. It studies the community, the state, and the nation for its directions, revealing, as such study does, the health status of the people. To reveal individual needs and supply them is its principal, its only important technique of development. It can justify its instructional and service aspects only as the proof of their need is demonstrable in the lives of either the student or the general public.

THE EXTENSION OF THE RESPONSIBILITIES TO COMMUNITY LIFE

Operating in its own sphere the school contributes to knowledge, affects behavior, and establishes a healthful environment. These are its opportunities within its own walls. But it is basic to today's conception of education to see the school as a force in the community. It no longer operates behind cloistered walls unrelated to the great public movements which shape the country's political, social, and scientific destiny. It is no longer tenable for the school to assume that it has done all it can for its pupils when, at the end of 12 or 16 years, they graduate and "go out into" the world. On the contrary, today's modern school maintains a constant interaction between itself and community life. Children bring the living problems into school for discussion and enlightenment and the school through its forums and organizations, through modern communications goes to the community for purposes of extending its educational services therein.

It is so in health education. Through the use of school and community health councils, parent education groups, and other extension devices, the school strives to keep the public informed of advances in health knowledge and about best contemporary health practices. Let a county

or a state, for example, be confronted with a legislative problem concerning the care of tuberculous people and one will expect to find the school taking an active part in molding public opinion on the subject. Let a problem of public concern over some epidemic disease assume proportions and the modern school may be observed as one institution among many with a program of action ready to meet the epidemic head-on. Its responsibilities for the health of people go beyond its own walls; its objectives are as well applied to the citizen out of school as they are to the boy and girl in attendance. In both school and public realms, the school shares the effort with other great agencies and organizations whose primary effort is directed toward public health education.

THE NATURE OF A MODERN PROGRAM

To move the population forward toward a deeper and wider understanding of life and its values and meanings, to afford the school population some understanding of modern science as it relates to human development—these are the basic purposes of the modern program of school health education. The school thus joins with the agencies in public health and with both preventive and constructive medicine to discharge its moral obligation to its pupils, who are attending because they are required to do so by law. The program itself, when fully developed, is not a simple thing; it has many ramifications, divisions, and interrelationships of personnel. It becomes the responsibility and province of no one person or profession.

In essence, and schematically presented, a modern school health education program may be described as follows:

THE HEALTH NEEDS OF THE SCHOOL AND COMMUNITY POPULATION
MAY BE MET BY

A PROGRAM OF INSTRUCTION	AND	A PROGRAM OF SERVICE AND ENVIRONMENTAL CONTROL
which is founded upon		which also is founded upon
AN APPRAISAL OF INFORMATION NEEDS		AN APPRAISAL OF NEEDS
which are organized into a		leading to an appropriate program of

COURSE OF STUDY AND CURRICULUM
requiring

SKILLED TEACHERS
who constantly attempt an

EVALUATION OF RESULTS
to determine whether

THE NEEDS ARE MET

MEDICAL, DENTAL, PSYCHIATRIC, AND EDUCATIONAL ACTIVITY
requiring

SKILLED PERSONNEL
who constantly attempt an

EVALUATION OF RESULTS
to determine whether

THE NEEDS ARE MET

The chapters which follow will discuss the problems underlying a program and the principles and procedures which seem appropriate for the most effective solution of some of these problems. The purposes of the school health program are distinctly educational in nature and remain within the purview of the school as an educational institution. The program seeks: (1) to inform, (2) to help make children fit to receive an education, (3) to give them experience with the best of scientific health practices, and (4) to secure for them a school environment favorable in every respect to their growth and development. These four purposes define and limit the scope of modern school health education. If they can be achieved the school may well say that it is making a constructive contribution to the health of the nation.

SELECTED READINGS

Expert Committee on Health Education of the Public, *W.H.O. Technical Report Series, No. 89*, Geneva, World Health Organization, October, 1954. Available from Columbia University Press, International Documents Service, 2960 Broadway, New York, N.Y.

MacIver, R. M., *The Pursuit of Happiness*, New York, Simon and Schuster, 1955.

Mooney, Ross L., "A Logic of Life and Death," *Merrill-Palmer Quarterly*, January 15, 1958.

Paul, Benjamin D. (ed.), *Health, Culture and Community*, New York, Russell Sage Foundation, 1955.

World Health Organization, Division of Public Information, *A Strategy for World Health*, Geneva, 1956.

Zimand, Savel (ed.), *Public Health and Welfare: The Citizen's Responsibility*, Selected Papers of Homer Folks, New York, Macmillan, 1958.

— 2 —

Basic Problems Confronting Schools

There is a good reason to believe that, for the foreseeable future, science in all its forms will be the dominant influence on the welfare and destiny of man. Religion, philosophy, metaphysics, art, superstition—all have had a prominent day of influence while scientific revelation was dormant. Now, in this and the next century, the scientist through his inquiries and the application of his findings will be in a position either to preserve or destroy mankind. The biologist, the physical scientist, the social scientist—all striving to understand man in his cosmos—are virtually overwhelming us with information about man and his world. Revelation after revelation comes from the laboratory and the field, each throwing new light as to cause or effect in relation to one or more of man's problems. Mysteries, formerly believed to be impenetrable, are being reduced to understanding.

The school, organized as it is to interpret the facts of man's culture to the oncoming generations, is caught up in this fast-moving world of science. It valiantly tries to bring to its students the facts of life and present them in such a way that they may be used to preserve and enrich life. This is the principal purpose of school health education—plus providing for students an experience in "going to school" which will contribute to their welfare and not be destructive of it.

This dual function is not an easy task and, as we shall see in subsequent chapters, it requires the coordinated and cooperative effort of many professional persons. To teach, and to conduct the teaching in an atmosphere conducive to learning, requires a considerable knowledge of the influences which bear upon the health of people and which create problems.

HEALTH STATUS OF THE POPULATION

What is the status of the health of people in the United States and in the world? Ideally we would want people to live on a high level of well-being, of efficiency, and be creatively productive by virtue of using their potential talents without the interference of destructive circumstances. It is difficult to achieve any measure of such living. Statistics do not show us how many people are living at their "built-in best." There is no way of measuring euphoria, or of judging the quality of high-level production. But we know that as people strive for such high-level living, for creative expression, they are sometimes thwarted by an adverse environment, by obstacles which arise either from within themselves or are imposed upon them from without. There are many who cannot achieve because they cannot cope. Life gets them down. They cannot rise above the obstacles in their way. They go to pieces with nervous disorders, succumb to tuberculosis, are accidentally killed in traffic, or are impaired by an hereditary imperfection.

We can discover the problems. We can analyze man's needs for effective living and for survival. In fact, the scientific approach to tasks involved in health education require fact-finding before any program of health instruction or health activities can be developed. The school itself can become a more healthful place in which to live only when the needs of children are known. It is axiomatic that the facts of life must be revealed before any intelligent action can be taken in the direction of improving the quality of living.

An examination of the individual himself and the individual in relation to his society will show both personal and aggregate needs; some of them can be met by individual action and others require group consent interpreted in public health measures.

THE PROBLEMS OF HEALTH

Scientists all over the world, in laboratory and hospital, in clinical practice and at the bedside of the ill, at the counseling table and in the classroom, are studying constantly those influences which would destroy or impair people. The great killers of yesterday—pneumonia, tuberculosis, yellow fever, malaria—have slowly yielded to man's conquering

knowledge and his *use of what he knows.* As each destructive influence was brought under control, others received attention. Today it is the noninfectious ailments such as heart disease, cancer, and accidents which are the prime destroyers of human life. And these are followed by mental illnesses, emotional disorders, joint diseases, diseases of the respiratory and digestive tracts, and diabetes. These are the illnesses that take the highest toll, and it would be well to have some understanding of their nature and prevalence in order to gear a school health education program to meet them.

Mental and Nervous Diseases and Other Forms of Psychogenic Maladjustments

Millions of people find themselves unable to adjust psychologically or emotionally to the demands of modern life. A million or more people in the United States are treated for mental illness each year in hospitals and many more receive care elsewhere. Emotional disorders such as anxiety, depression, lack of confidence, hysteria, and chronic worry account for unestimated millions more. It is thought that 25 percent of the nation's labor force are emotionally disturbed in one way or another. There are more than 50 thousand narcotic addicts and some 4 million "problem drinkers" in our society. Nearly all these people have some mental or emotional problem at the root of their difficulty.

The figures are impressive and shed light on the type of problem which faces us in education. Over 400 thousand persons are now suffering from some mental breakdown of sufficient severity to make hospitalization necessary. Probably another million persons with similar instabilities should be in hospitals. About one out of every twenty persons will, sooner or later, suffer some temporary or permanent psychological disorder which will make it necessary to have psychiatric or hospital treatment. Studies have indicated that roughly 12 percent of all children in the first six grades are seriously maladjusted and need mental-health assistance.

Since 1940 the United States has prepared its greatest inventory on the health status of its population. The administration of the Selective Service Act provided for medical and psychological examinations of more millions of people than were ever before examined in one program. It is no comfort to know that roughly 40 percent of all those examined for service were rejected for medical reasons and that one out

of every eight rejections were for mental disease of some form or other. Mental disease clearly leads the list of all causes for rejection for military service. Moreover, nearly a half-million men were discharged from the services for neuropsychiatric disorders after they had once been judged acceptable!

What sort of society do we have which will produce such conditions in the short life span of 20 or 30 years? What influences are at work to prevent the development of acceptable psychological states and to produce such variations as to make this large segment of the population unfit to perform the task of bearing arms?

Those adverse psychological states lie at the root of many overt acts of an antisocial nature. It has been shown, for example, how the tensions of family life, producing, as they do, acute irritation, are sometimes responsible for bad judgment in driving an automobile. There are a quarter of a million children brought into juvenile courts every year, many of whom are there because of the absence of an opportunity to learn the standards of appropriate behavior. Who knows what preventable maladjustments lie behind the nearly 2 million crimes committed in the United States each year; or what emotional problems are responsible for what proportion of chronic alcoholism?

These evidences of the existence of adverse psychological states are spectacular. There are other manifestations which are not as easily discernible but which are operative nevertheless. The hostilities shown in social and religious prejudice, the tensions underlying labor disputes, and many of the personal instances of absenteeism, incompetence, and dissatisfaction are traceable to the inability of the individual to find a way to meet the demands made upon him. Health education in school exists, in part, to help him find a way.

Viewing the figures from still another standpoint, one finds in 1950 a suicide rate of 11.4 per 100,000. This makes suicide about the fourteenth or fifteenth leading cause of death, depending upon the year the figures are read. It is greater than birth injuries, ulcers, appendicitis, or murder, and just less than syphilis and influenza. The frustrations, fears, disappointments, and sorrows that lead to suicide may be as preventable, under timely treatment, early instruction, or a reorganized environment as some of the communicable diseases are preventable by the application of the same three factors. Three to four times as many men commit suicide as women. The intriguing question is: *How can society*

be organized so as to remove some of the pressures on men which lead them to self-destruction?

In 1958 Americans consumed 45 million aspirin tablets daily, and swallowed 20 million sleeping pills each night. American doctors in 1960 will write nearly 40 million prescriptions for "tranquilizers," hoping to stave off the anxiety, depression, and fear that hamstring our modern living.

Today the hallmarks of our civilization are stomach ulcers and heart attacks. Slowly but surely in our land of bounty we are driving ourselves to a sort of prosperous desperation.[1] The roots of many of these mental disturbances are deeply laid in childhood and adolescence. Comparatively few children will show the adult type of neurosis or psychosis, but the behavior and personality problems of the younger years, the misdirections and maladjustments of childhood are basic to later difficulties. The fruitful time for prevention is the school age. This is the time to lay a foundation of stability, confidence, and strength, with freedom from fear, anxiety, and insecurity. Thus, when one deals directly with the problem in school health education, there appear two inescapable questions: What specifically are the causative influences of these mental breakdowns? What specifically can school health education do to prevent them?

Everyone must learn sooner or later to gear his own desires, ambitions, likes, wants, and feelings to the world of possibility in which he lives. Man in infancy and childhood must learn to be a social being. In early life he is distinctly an individualist, motivated by the urge of self-preservation and is relatively oblivious to any interests other than his own. Society imposes upon him, however, the necessity of being concerned for others, giving others their rights. The world he lives in demands that his self-preserving and self-seeking motives be modified to allow for as much satisfaction of the interests of as many people as possible. Some have great difficulty in making this kind of social adjustment. They develop early the inabilities to share, to respect the rights of others, or to direct their own lives through the maze of requirements which all must meet in order to live.

Ambition drives men and women forward. In a competitive world they strive for security, food, wealth, position. It is human to want

[1] W. Stanley Hoole, "The True End of Knowledge," *The Saturday Review*, June 8, 1957, p. 22.

some degree of mastery or distinction. And many, of course, find such success. They become satisfied with their lot, and their frustrations and disappointments are at a minimum. Their happiness is secure and their adjustment, thus, is well established.

When, however, success does not attend their efforts, when failure and discouragement are the end products of their work or planning, then they must call upon their resources in philosophy or religion, or their background of substitute reactions to tide them over and keep them from breaking under the strain of disappointment.

No one is born with these psychological or social adjustments all made. What we are *taught* has a great bearing upon them. The fact that so many fail to make the desirable adjustments is evidence that either the maladjusted person was not taught how to maintain a psychological and social stability, or the genetic factor or the environmental circumstances are such as to make such appropriate reactions virtually impossible.

Dean I. James Quillen of Stanford University summarizes his impression of this problem as follows:

> I think that the problems in the future will be increasingly in the area of mental hygiene and mental health, that the development of anxiety and boredom in our culture means that there needs to be more emphasis on individuality and creativity. I think that we may be overstressing socialization because of the hold-over of our memory of conditions in the 30's. What we may need to be concerned about with many children is a greater sense of privacy, a greater sense of concern for their individuality and for the development of that individuality in terms of uniqueness in creativeness.[2]

Communicable Diseases

Mankind has been fighting against the parasite, the microorganism, the germ for as long as he has known they were enemies. The microscope gave him a chance to see the invader. Pasteur described the germ in relation to disease, and countless revelations since have established clearly that there are dozens of diseases passed from man to man which are capable of his destruction if allowed to run their course.

Man has learned to fight them with many weapons. He rids his

[2] I. James Quillen, "Current Changes in Community Life and Their Implications for Health Education," Los Angeles, University of California, 1958 Workshop in Health Education, p. 10. (Mimeographed transcription of a tape recording.)

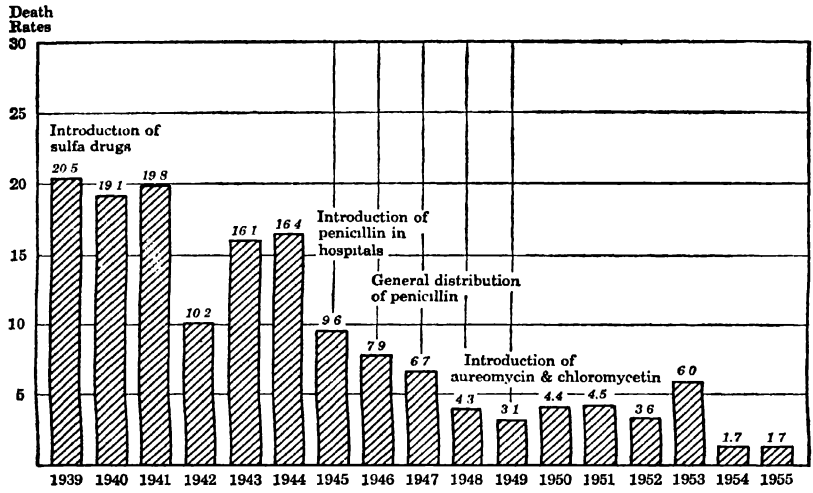


FIGURE 1. Decline in Influenza Deaths. (SOURCE: National Office of Vital Statistics. Death rates per 100,000 estimated mid-year population.)

water supply of the bacillus of dysentery by chlorinating it. He immunizes his newborn against smallpox and diphtheria before the child is a year old. He screens out those children who may have tuberculosis and subjects them to intensive diagnostic procedures to ascertain whether the disease is present. He repairs his teeth against focal infection, he pasteurizes his milk against undulant fever, and he sprays D.D.T. to kill the malaria-bearing mosquito. The modern world has developed hundreds of techniques to control these organisms and still they take a heavy annual toll in sickness and death.

In medicine we have seen the development of the sulfa drugs; the antibiotics, such as penicillin, streptomycin, aureomycin; and the sterol derivatives, such as cortisone. We have seen the introduction of the phenomenal poliomyelitis vaccines, which have drastically reduced the incidence of that dreaded disease. There have been new drugs developed for the treatment of mental disease.[3]

[3] Glenn T. Seaborg, "Education in Our Age: Let's Define the Problem," *California Schools*, XXIX, No. 6 (June, 1958), 389.

Accession No. 4830 AGARTALA, TRIPURA
24107 7-12-82 AGARTALA, TRIPURA

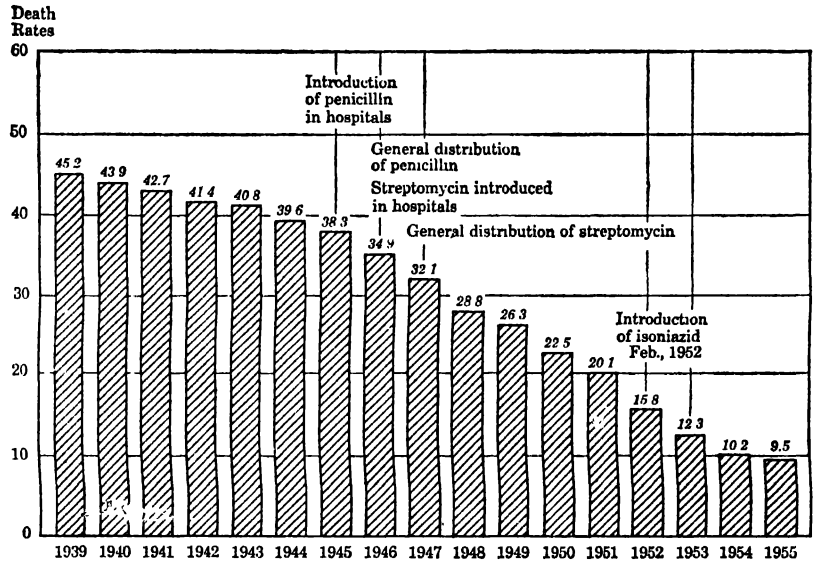


FIGURE 2. Decline in Tuberculosis Deaths. (SOURCE: National Office of Vital Statistics. Death rates per 100,000 estimated mid-year population.)

The results have been spectacular. Since 1944, the death rate for acute rheumatic fever has been reduced 77 percent, pneumonia and influenza 53 percent, syphilis 73 percent, and acute nephritis 65 percent. Deaths due to many other infections, including post-operative infections, have been sharply cut.[4] The tuberculosis death rate since the use of isoniazid drugs has declined 59 percent between 1951 and 1956. The maternal death rate has been cut 77 percent, and deaths from gastrointestinal disease in infancy have been cut 64 percent.

Such spectacular progress cannot be made through the clinical experience alone. There must be a population that is informed and receptive to the effective preventive and therapeutic treatments. Education, both through public means and through the schools, assumes the major role in developing this receptivity.

[4] The National Health Education Committee, Inc., *Facts on the Major Killing and Crippling Diseases in the United States Today,* New York, 1957.

Sedentary Living and Health

Since the industrial revolution man's way of living in this country and elsewhere has been profoundly affected by the labor-saving devices and short cuts which industrial progress has made possible. The world is richer for the mechanical devices we use to light our homes, plow our fields, transport us on land, sea, and air, and build shelter for us. Life has been made more comfortable, easier, and at the same time more complex. Biologically, however, the industrial revolution was not an unmixed blessing. It substituted machinery for much of the hard work. It has made muscular labor largely unnecessary. Millions now can live with no more effort on their part than picking up a telephone or signing their name. They are relieved of the necessity of plowing a field, building a house, or killing game to survive. For many, survival becomes a battle of wits, not a test of brawn. The premium today is on intelligence and not on muscles. Even on farms, in coal mines, and in other pursuits where muscular strength and skill are still largely needed, the trend is toward the development of an ever-increasing number of devices which will lessen the need for hard work.

In all these years, however, the human body has changed very little. For centuries the same structures have served the same functions. The same relationships between abdominal wall and viscera exist today as existed a thousand years ago. The area between hips and shoulders contains most of the vital organs of the body. Their relationship to each other, their position, their function depend in great measure upon the tonicity of the abdominal wall. Let the four great muscles, the internal and external oblique, the rectus, and the transversalis become flabby from disuse and the weight of the organs behind them responds to gravity. Varying degrees of ptosis result. Muscles respond to use. It is plain to see that disuse of the abdominal wall will affect the efficient functioning of the viscera. Thus activity, physical activity, the active working life, utilizing the abdominal wall in the great natural movements of lifting, climbing, running, swinging, and others, is important to organic welfare.

It is reasonable to believe that many of the health problems of the middle years and later have their origins in inactivity. Many of the tensions, the disturbances of the heart, blood vessels, and kidneys, disturbances of digestion and elimination may be induced by years of

soft, inactive living behind desks where the only strength needed is to pull on one's shoes in the morning! It is impossible to estimate the number or kind of problems both organic and psychologieal which arise out of this situation. Sedentary living is convenient but costly in terms of function, of strength and vigor.

TABLE 1. Sex Ratio of Mortality from Leading Causes[a] in Specified Age Groups—White Persons, U. S., 1955

Cause of Death	Death Rates per 100,000		Percentage of Male-Female Death Rate	Percent of All Causes	
	White Males	White Females		White Males	White Females
All Causes	109.9	90.6	121	100.0	100.0
Accidents	32.9	23.7	139	29.9	26.2
Malignant neoplasms	13.1	10.6	124	11.9	11.7
Congenital malformations	12.2	11.7	104	11.1	12.9
Influenza and pneumonia	11.9	11.1	107	10.8	12.3
Gastritis and enteritis	4.1	3.0	137	3.7	3.3
All other causes	35.7	30.5	117	32.6	33.6
			Ages 5–14 Years		
All Causes	56.1	35.6	158	100.0	100.0
Accidents	26.6	10.9	244	47.4	30.6
Malignant neoplasms	8.5	5.9	144	15.2	16.6
Congenital malformations	2.9	2.7	107	5.2	7.6
Influenza and pneumonia	2.2	2.1	105	3.9	5.9
Acute poliomyelitis	1.1	0.9	122	2.0	2.5
All other causes	14.7	13.0	113	26.3	36.8
			Ages 15–24 Years		
All Causes	153.5	58.7	261	100.0	100.0
Accidents	100.8	20.1	501	65.7	34.2
Malignant neoplasms	11.2	7.3	153	7.3	12.4
Suicide	6.1	2.0	305	4.0	3.4
Diseases of heart	4.7	3.6	131	3.1	6.1
Homicide	3.5	1.2	292	2.3	2.0
All other causes	27.3	24.5	111	17.6	41.9
			Ages 25–44 Years		
All Causes	251.4	141.7	177	100.0	100.0
Accidents	69.7	15.0	465	27.7	10.6
Diseases of heart	62.6	19.6	319	24.9	13.8

TABLE 1 (*Continued*)

Cause of Death	Death Rates per 100,000		Percentage of Male-Female Death Rate	Percent of All causes	
	White Males	White Females		White Males	White Females
Malignant neoplasms	30.6	45.1	68	12.2	31.8
Suicide	16.2	5.7	284	6.4	4.0
Vascular lesions	7.8	7.4	105	3.1	5.2
All other causes	64.5	48.9	132	25.7	34.6
			Ages 65 and Over		
All Causes	1,467.9	752.2	195	100.0	100.0
Diseases of heart	678.8	236.3	287	46.2	31.4
Malignant neoplasms	277.3	249.7	111	18.9	33.2
Vascular lesions	94.2	75.4	125	6.4	10.0
Accidents	84.3	25.5	331	5.7	3.4
Suicide	36.7	10.3	356	2.5	1.4
All other causes	296.7	155.0	191	20.3	20.6
			Ages 45–64 Years		
All Causes	7,035.7	5,374.7	131	100.0	100.0
Diseases of heart	3,326.9	2,485.2	134	47.3	46.2
Malignant neoplasms	1,070.3	764.9	140	15.2	14.2
Vascular lesions	956.0	923.1	104	13.6	17.2
General arteriosclerosis	229.5	210.6	109	3.3	3.9
Accidents	207.8	171.5	121	3.0	3.2
All other causes	1,245.3	819.4	152	17.6	15.3

[a] Listed according to rank among white males.

SOURCE: National Office of Vital Statistics, *Vital Statistics--Special Reports*, 46, No. 8, and Vital Statistics of the United States, 1955.

Diseases of Middle Age

Facing millions of people are states of lowered function or actual disease attendant upon their middle and old age. Digestive disturbances, constipation, diseases of the heart and kidneys, the tumors both malignant and benign, and impaired function of any or all of the great vital organs make up the fourth of America's great health problems. These are not, strictly speaking, diseases of degeneration; no degeneration may be present in some of them. The term *degeneration* is not an accurate one. The term is useful only to connote a change for the worse, a lessen-

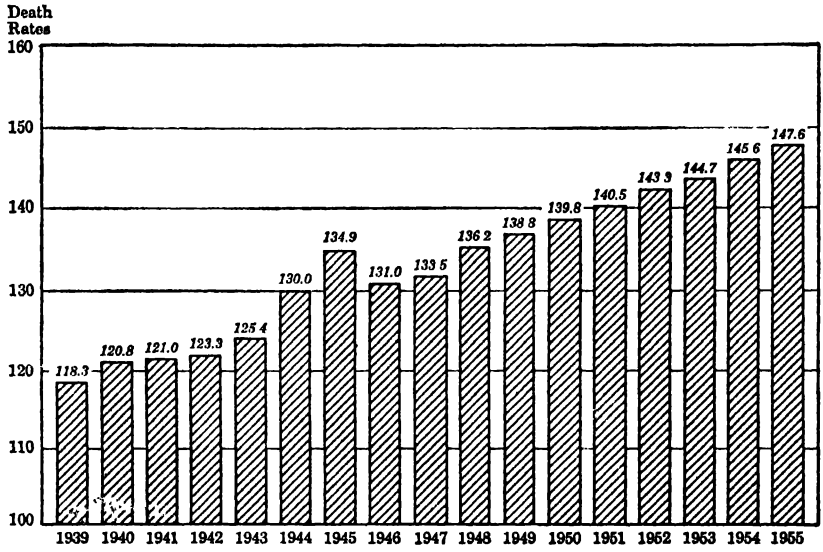


FIGURE 3. Increase in Cancer Deaths. (SOURCE: National Office of Vital Statistics. Death rates per 100,000 estimated mid-year population.)

ing of efficiency, an alteration in function which almost always assumes serious proportions. Medical or surgical care is required to circumvent, where possible, the death which is all too frequently the result of the change. It is roughly estimated that at any given time 2 out of every 100 people are incapacitated from illness or accident, and of these one person is incapacitated unnecessarily. Of this latter group many are victims of one or more of these states which might have been postponed or avoided had the individual been more appropriately informed about his own welfare.

Consider cancer, for example. About one out of every six deaths is from cancer. In 1955, 242,430 Americans died from the disease. It is estimated that of those people now alive in the United States, 26 million of them will die of cancer. Compared to cancer, war produces less than one-quarter the number of deaths per year. Cancer is the number-two killer next to the cardiovascular-renal diseases. The school program that does not include instruction about cancer, about the importance

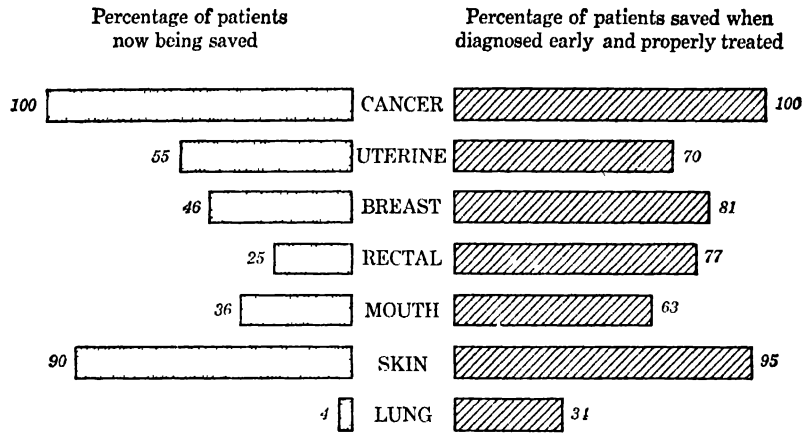


FIGURE 4. Cancer: Early Diagnosis Saves Lives. These estimates are based on reports to the Third National Cancer Conference. (SOURCE: Alton L. Blakeslee, "Where Do We Stand on Cancer, Heart Disease, and Mental Illness?" *Today's Health*, XXXVI, No. 8 [August, 1958], 18.)

of early diagnosis and the availability of treatment, about the nature and symptoms of the disease is remiss indeed.

The cardiovascular-renal group of diseases (heart, blood vessels, kidney) is the greatest cause of death of all. Coronary arteriosclerosis, the most common form of heart disease, caused 400,050 deaths in 1955 alone. Just over half the number of deaths from all causes are deaths in this group. There are roughly 10 million people alive who are suffering greatly from one or more forms of heart and blood vessel disorder.

It is estimated that 826,890 Americans died of cardiovascular-renal diseases in 1955, out of a total of 1,527,000 deaths.

The American Heart Association makes clear the role which school and public health education must play in the control of the disease. People must be educated to avoid the infections which may lead to heart disease; to care for infections scientifically when they occur; to seek competent medical advice; and to live a life in adulthood free from overweight and anxiety. These preventive and sometimes compensating factors must be taught. They may not prevent or arrest heart disease in every case but they are important in its control and reduction.

TABLE 2. Deaths Caused by Diseases of the Heart and Circulation

Arteriosclerotic heart disease (including coronary disease)	400,150
Vascular lesions affecting the central nervous system (primarily cerebral thrombosis, due to *arteriosclerosis*, cerebral hemorrhage, cerebral embolism)	175,120
Hypertension with heart disease	72,630
Nonrheumatic chronic endocarditis and other myocardial degeneration	66,150
General arteriosclerosis	31,860
Chronic rheumatic heart disease	18,410
Hypertension (without mention of heart disease)	11,260
Acute rheumatic fever	1,220
Other diseases of the heart	20,930
Other diseases of the circulatory system	12,470
Total diseases of cardiovascular system	810,200
Chronic and unspecified nephritis (kidney disease) and other renal (kidney) sclerosis	16,690
Total deaths from cardiovascular-renal diseases, 1955	826,890

SOURCE: The National Health Education Committee, Inc., *Facts on the Major Killing and Crippling Diseases in the United States Today*. Section on Diseases of the Heart and Circulation, New York, 1957, p. 1.

The school has an opportunity to educate its students to the desirability of (1) preventing heart disease whenever possible, (2) seeking medical treatment promptly when it appears, and (3) supporting voluntary and official efforts to expand research and public education about heart disease.

Diseases such as diabetes, asthma, allergies, appendicitis, ulcers, cirrhosis, cystic fibrosis, multiple sclerosis, and dental decay produce similar problems of loss of efficiency, ill health, or death. The aging population afflicted with one or more of these disturbances causes the educator to raise three questions: How can reductions in both morbidity and mortality rates be brought about? What contribution can school health education make to such a reduction? And how can the school, in the face of the inevitability of such diseases, prepare people to compensate for their afflictions?

The Hazard of Accidents

Lamented and uncivilized though war is, there are even greater unnecessary killers. The accident is the most prominent of these. Annually between 95 and 96 thousand deaths in the United States are ascribed to accidents and nearly 10 million disabling injuries resulted from them. These figures are greater than the annual losses from warfare. There is an annual economic waste of 8 billion dollars. Probably no health problem has been analyzed more thoroughly than that of accidents. Statistics concerning rates, age and sex differences, probabilities, and classifications are abundant to inform anyone who will inquire.

It is known, for example, that there are more deaths from accidents in childhood than from any other cause. Roughly 40 percent of all deaths of children between the ages of 5 and 19 are caused by accidents, with the greatest toll in adolescence, where roughly 42 percent of all deaths are so caused.

About 6,000 deaths occur annually in the United States from accidents among children at ages 5–14 years. The toll is particularly high among boys; more than two fifths of their total mortality at these ages results from injuries. In 1952 the loss of life from accidents among boys was more than four times that from cancer and other malignant neoplasms, fully seven times that from acute poliomyelitis, and nine times the loss from pneumonia and influenza combined. Indeed, among the older elementary school boys—those at ages 10–14—accidents took a greater number of lives than all other causes together. Although accidents are not as dominant in the mortality among girls, they nevertheless account for well over a fourth of all the deaths and far outrank every other cause of death in the age range 5–14.[5]

Accidents in and around school are largely preventable but prevention requires a knowledge of where the accidents happen and the circumstances which bring them about. The National Safety Council in 1957 analyzed school accidents and showed the relative frequency with which accidents happen and where.

It has been said, and not altogether facetiously, that "accidents don't just happen." They are caused. They are caused either by a defect in the environment in which we live or by a defect in the person trying to

[5] Metropolitan Life Insurance Co., "Accident Toll at the School Ages," *Statistical Bulletin*, XXXVI, No. 8 (August, 1955).

TABLE 3. Mortality from Accidents Among School-Age Children According to Place and Type of Accident, U.S., 1954–1955

Place and Type of Accident	Ages 5–14			Ages 5–9			Ages 10–14		
	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls
	Average Annual Number								
Number of deaths	6,020	4,263	1,757	3,246	2,155	1,091	2,774	2,108	666
Death rate per 100,000	20.2	28.0	12.0	19.4	25.2	13.3	21.2	31.6	10.3
	Percent Distribution by Place of Accident								
All places	100	100	100	100	100	100	100	100	100
Transport	45	43	48	47	47	48	42	39	50
Motor vehicle	39	37	44	43	42	45	35	32	43
Nontransport	55	57	52	53	53	52	58	61	50
Home	20	16	30	23	18	34	16	14	22
Farm	7	8	3	5	6	3	8	10	3
Street and highway	2	2	1	1	1	1	2	2	1
Other specified (inc. recreation)	22	26	14	19	24	10	27	30	19
Unspecified	4	5	4	5	4	4	5	5	5
	Percent Distribution by Type of Accident								
All types	100	100	100	100	100	100	100	100	100
Motor vehicle—total	39	37	44	43	42	45	35	32	43
Pedestrian	18	18	19	26	27	25	9	9	11
Other road vehicle	2	1	2	1	1	1	2	2	3
Railroad	1	1	1	1	1	1	1	1	1
Water transportation	3	3	1	2	2	1	3	4	2
Drowning (exc. water transportation)	20	24	12	18	22	8	24	25	19
Fire and explosion	11	7	21	14	9	26	6	4	13
Firearm	7	9	4	4	5	3	11	13	5
Falls	3	4	3	4	4	3	3	3	2
From one level to another	2	2	2	2	3	2	2	2	1
Machinery	2	3	1	2	2	1	3	3	[a]
Blow from falling object	1	1	1	1	1	1	1	1	[a]
Electric current	1	1	1	1	1	1	1	1	1
Other and unspecified	10	9	9	9	10	9	10	11	11

[a] Less than 0.5.

SOURCE OF BASIC DATA: Reports of the National Office of Vital Statistics.

manipulate his environment. Either the machine was faulty or the operator fatigued. Either the bathroom floor was slippery or the bather was careless in where he stepped. In either event, the cause could have been removed in the overwhelming majority of accidents. The annual toll of accidents in lives and dollars makes this a major health problem, and school health education attacks this problem as it does the others: by means of education of the individual student, through teaching him

TABLE 4. High-Frequency Accident Locations and Activities

Location or Activity	Frequency Class	Location or Activity	Frequency Class
Kindergarten through third grade		*Seventh through ninth grades*	
School Plant		School Plant	
Unorganized activities	2	Auditoriums and classrooms	1
Auditoriums and classrooms	2	Basketball	1
Playground apparatus	3	Football	1
Going to and from School		Shops	2
Street, sidewalk (mostly falls)	4	Inside stairways	3
Home		Going to and from School	
Falls	1	Street, sidewalk (mostly falls)	5
Cuts and scratches	1	Motor vehicle	5
Other		Home	
Motor vehicle	2	Falls	1
Bicycle	4	Cuts and scratches	4
Fourth through sixth grades		Other	
School Plant		Play activities	1
Unorganized activities	2	Motor vehicle	3
Auditoriums and classrooms	3	Street, sidewalk (mostly falls)	3
Playground apparatus	4		
Going to and from School		*Tenth through twelfth grades*	
Street, sidewalk (mostly falls)	4	School Plant	
Home		Football	1
Falls	1	Basketball	2
Cuts and scratches	2	Shops	2
Other		Going to and from School	5
Play activities	1	Home	
Bicycle	2	Falls	5
Street, sidewalk (mostly falls)	3	Other	
Motor vehicle	3	Play activities	1
		Motor vehicle	3

SOURCE: National Safety Council, *Accident Facts*, Chicago, 1957, p. 91.

how to live safely and how to organize a constantly safer environment.

The Hazards of Infancy and Maternity

Each year in more than 3 million households of the United States a child is born. Roughly 100,000 children are stillborn and another 100,000 or more die during the first year of life. The infant mortality rates in the United States are not the lowest in the world. On the contrary, they are higher than one would expect of people who place such a high premium on human life. For it is the sad fact that much of this loss of life is totally unnecessary. Neither the causes of these deaths nor the conditions which produce them are beyond the scope of modern medical science. Many of the deaths are due to infections which "good care before and at the time of delivery could practically eliminate." If mothers knew more, if they were better educated in their school days, if in the secondary schools girls were brought closer to their eventual maternal responsibilities, they would insist upon better care during pregnancy and they would know enough themselves to care better for their infants after birth. Problems associated with infection, feeding the child, diet of the mother, secondary complications like heart disease or fatigue, and psychological anxieties or tensions are the principal causes of disaster attending maternity. Not in all cases but surely in many, infant or maternal deaths can be averted if the problems are made a part of school effort toward health education.

The Birth Rate and the Population

There are many who see in the rising birth rate in the United States a serious health problem for the nation. It is contended that there is a greater tendency toward mediocrity and inferiority than toward superior stock. The birth rate among the so-called "lower" classes is higher than that among college graduates, for example, and thus alarm is felt that in a century or so the quality of human tissue will be lowered to the "danger" spot. Large families seem to be more prevalent among the lower-income groups, and if the lower income means less ability to succeed, then the contention is we will have a nation of less able stock than heretofore.

The problem is not a simple one. It can neither be tossed aside as something far too large or too personal to handle nor be handled as

the Nazi party in Germany dealt with it. They described the characteristics of a super race and encouraged marriage within that group. Certainly the marriage of those whose offspring are sure to be a burden to themselves and to society might well be prevented. Certainly some control over the production of defective offspring could well be exercised. To these ends many organizations are devoting their programs. They wish to inform, to educate people through broad campaigns and through clinical consultation, to the end that fewer health problems will be created and that the quality in the human stock of the nation may be kept high.

Less spectacular than the foregoing is, of course, the constant problem facing millions of young people of the part the hereditary or genetic factor will play in their marriage. Thoughtful young people wonder about the inheritability of characteristics. They want to know if musical talents, good looks, sweet dispositions are inheritable. They want to know if, when they marry, they marry "the whole family." They ponder over the inheritance of insanity, size, color, and race. They want to know all about the Rh factor and more and more each year they come face to face with the problem of birth control.

For the answer to these problems many of them turn to the school and to the church. In biology, health, and social science exist great opportunities for advancing the information of young people and helping them plan for more intelligent selection in marriage and more successful married life. The problems associated with the birth rate and the population constitute a very real series in the group of major health problems.

The Use and Availability of Scientific Health Services

Certainly one mark of the level of civilization of a people is the availability of medical and dental services and the use which they get. Any description of a civilized people would have to include the story of their development of personnel and institutions devoted to the protection, care, and improvement of the health of the individual members of their society. It is more than coincidental that those countries of the twentieth century judged highly civilized, such as Sweden, the United States, Great Britain, are also the countries with the highest type and best distribution of medical, dental, hospital, nursing, and other health services. Civilization means, among other things, intelli-

gent arrangements for the health of the people. The better the arrangements, the higher the level of community or national development.

As a health problem, then, the use of professional health services has three aspects: the education of people to use scientific agencies, the distribution of the services throughout the population, and the education of people away from the unscientific fad and the quack.

Surprisingly enough, many have to be taught to avail themselves of the services of the doctor or the dentist. Many children grow up never having seen a doctor or dentist. Nearly half the children in the rural United States have never had the benefit of medical attention. They do not know what modern medicine has to offer or what services may be had for their care and protection. They must be taught what scientific care is and how to distinguish it from unscientific humbug. Many others know of the advance of science in caring for human life but because of an unfortunate past experience, a prejudice, a misconception, or perhaps a religious bias they neglect or ignore the best society has to offer. They thus need reeducating or reorienting toward modern health care. The American has a right to choose his physician. He may go to a witch doctor, a faith healer, a chiropractor, or a medical doctor. The choice is his. He must be educated to make a wise choice.

Getting a more adequate distribution of these services throughout rural and urban areas is an equally difficult problem. Medical services and procedure tend to become centralized in cities and in certain neighborhoods in cities. Forty percent of the counties in the United States have no health officer guarding the public health and some 15 million people have no recognized hospital available in the counties where they live.

On the other hand, few countries have expanded private and public services of this kind as far as we have. The growth in the twentieth century of the public health concept, i.e., that government has a rightful concern for the health of the people, has extended health services into areas where none had ever existed before. It has marked the passage of much disease control and sanitation legislation, has widened the functions of school health education, and has brought about the development of public clinics by the thousands for the care of the indigent and needy. By both private enterprise and public means health services are being made available to the people of the country.

But still the public spends nearly 300 million dollars every year on

quack or fake healers. Another similar amount is spent for patent medicines, drugstore "cures" of dubious value or no value at all. Scores of persons lose their lives each year unnecessarily because they placed their faith in some spurious quack treatment and neglected to use the scientific facilities which were available. Millions of people spend their money chasing the rainbows of cures for baldness, skin beautifiers, reducing drugs, remedies for diseases of middle age, and the dozens of other advertised pills, drops, appliances, tonics, systems, or treatments which the unscrupulous foist upon the gullible public. The annual loss is terrific in monetary waste, prolonged sickness, heartache and disappointment, and death.

There are over a hundred identifiable healing cults or groups in this country. They range from the very prominent ones, such as the manipulative cults, which purport to cure all by releasing pent-up nerve energy, and the faith-healing groups, which believe that all illness is evil and that prayer will protect against diphtheria or cancer, to the bizarre and little-known groups practicing some abracadabra and filching a dollar here and there from the uninformed.

To all of these unsound and spurious practices and groups school health education most surely should pay its respects. The public deserves to be informed, to be protected against loss of money, hope, and life. The consumer of health services, like the consumer of food, deserves to know where the poison is, where high quality may be found, and where he and his family may find safety in the best which modern medical science can offer. The problems here are numerous and represent an important phase of school health instruction.

The Problems of Food and Diet

In this land of plenty where the production of food exceeds by far domestic consumption, nutritionists say there is still much wanting in the way most people solve their nutritional problems. Not only is food not distributed as well as it should be, but people do not eat the things they should for best growth and development. The science of nutrition has a great deal to offer.

For example, it is said that about 40 percent of the population eat neither tomatoes, citrus fruits, nor cabbage, all important sources of vitamin C. It is estimated that 34 percent eat no milk or cheese and that 48 percent fail to eat at least one egg a day. These important sources of protein are necessary for best growth and repair. Far too

many mothers either do not know what to feed infants and children or are unable to procure good food for them. Carious teeth are in some cases caused by dietary mistakes. Certainly two adult problems, overweight and constipation, might both be solved if there were more widespread use of the knowledge of nutrition which is available. It is no longer the housewife alone who needs to be intelligent about the selection of food. The millions who eat at least one meal a day in restaurants have problems of selection and consumption. Here also the woods are full of quacks and charlatans preying upon an uninformed public. Hollywood diets, reducing fads, special foods for this or that, queer notions about vegetarianism, foods with supposedly exceptional and special merit—all of these are exploited and sold to a public ripe for such deception. The school must bring better information to its students.

The vitamin fad is largely a typical product of the inadequacy of school health instruction. Had people been better instructed on the nature and limitations of vitamins, much of the pother about them could have been eliminated and again much of the consumer's money saved. There are unlimited opportunities for the educator to improve the eating practices of people. Once the problems become known, the scientific facts can be brought to bear.

Problems Originating in the Environment

Not all of the major health problems originate in germs, or food, or accidental situations. Man frequently creates his own problem by establishing an environment which in itself is not conducive to good living. He seems to create these problems only to spend time and money trying to solve them. Frequently we have witnessed large building interests constructing tenements where large families live in small spaces; whereupon the individual stockholders give thousands of dollars to the charitable or relief organizations whose aim is to alleviate the trying conditions which the buildings themselves produce. Inadequate housing, unsafe buildings, crowded quarters, insanitary plumbing, insufficient refrigeration and water supply, and lack of privacy are some of the environmental conditions which produce the personal and group health problems of epidemics, maladjustments, unhappiness, and disaster.

In the growth of cities there has been little attention given to the recreational needs of the population. Houses, buildings, factories, rail-

roads, stores—all have been built in proximity and rarely has space been left for open air, parks, playgrounds, pools, and woods. City dwellers have to go miles in search of fun and relaxation. Problems of tension, frustration, boredom, and monotony, as well as those associated with sedentary living, may be added to the social ills of delinquency and unsocial behavior characteristic of crowded urban areas. Situations of this sort concern school health education not so much, perhaps, for the direct results which may be obtained in the lives of people experiencing these adverse environmental conditions, as in the hope that by revealing the problems the conditions creating them may be removed. It is more fruitful to get rid of tenements than it is to help a tenement dweller live more comfortably in one. At all events, both attacks must be made on the health problems created by an adverse environment. The long-range alleviation of causes of a problem must be attempted and immediate suggestion for adjustment to the problem must be offered.

Superstition and Magic

Man has always had an insatiable appetite to know the mysteries of his own life.[6] Since primitive days he has searched, analyzed, experimented, and examined to discover the knowledge of his origin, his function, and the causes of illness and death. The zeal with which he has pursued this knowledge is responsible for the very great amount of information the world now has concerning man.

Nor has man ever been balked in his search for the answer to life's perplexities. If he has been unable to find an answer readily available he has made one up. Conjectures, hypotheses, theories, and simple guesses have taken up more space in the libraries of the world than demonstrated facts. If man has not been able to establish an intelligent control over the means of achieving, he has resorted to the mysterious or the magical. He has simply refused to take "I don't know" for an answer. Thus from the savages of ancient civilizations with their sorcery, their sun worship, or their potions and incantations, through the Greeks and Romans with their hundreds of gods of healing, through Hippocrates and the four humors, through the centuries of speculation

[6] See an excellent article by Bruno Gebhard, M.D., entitled "Historical Relationship Between Scientific and Lay Medicine for Present Day Patient Education," the *Bulletin of the History of Medicine,* XXXII, No. 1 (January, 1958), 46.

on the nature of disease which led up to Pasteur, through recent decades of investigation on cancer, psychoses, virus diseases, and psychosomatic relationships, to the present moment, man has insisted on answers, true or otherwise, to the mysteries of his nature. Many of these speculations, hypotheses, or folk practices of other centuries remain today. Studies have revealed literally hundreds which relate to health. These beliefs present a very real obstacle in the path of advancing scientific knowledge. They frequently bar the way and leave a person more likely to retain the superstition or folk belief than to accept carefully revealed scientific information.

Such superstitions are likely to affect the thinking of well-educated persons only because of the difficulty in assimilating the idea that the human being is a very complex organism. We would much prefer to simplify him, to believe in a simple cause-and-effect relationship. This gets us into trouble. For example, the widespread expectation that a single disease has a single cause and a simple cure plays directly into the hands of quacks. Recently, the Postmaster General of the United States reported that sure-cure medical quackery by mail had reached the highest level in history. During the past year ". . . postal inspectors have prepared cases representing an annual loss to the public of fifty million dollars."[7] To develop ways to combat quacks in their exploitation of this advantage is a challenge to us in health education. Many lives could be saved that are lost because of dependence on quacks.

Likewise, man has been quick, particularly since the industrial revolution, to accept time- or labor-saving devices. He welcomes a machine or a short cut of some kind which will do a job in half the time necessary for the old way. The twentieth century finds no abatement of this interest; time- and labor-saving devices will continue to be developed over the years. This insistence on speed and labor saving frequently complicates the development of a child or the healing of an illness. It may lead impatient parents to believe that in place of the out-of-doors, fields and streams, good food, and long hours of sleep, they can substitute vitamin pills or some other magical device and so help their child to develop more quickly. Or it leads others to put faith in the quick manipulation of a "bonesetter" or the handy phrase of the "psychic healer." Belief in magic leads many to hopeless remedies, fake cures,

[7] " 'Sure-Cure' Quackery Reaches Peak in Mails," *Washington Post*, May 12, 1957.

and blasted hopes. Education has the opportunity to establish the scientific point of view, the patience which comes from understanding, and an understanding of the complexities of the human organism.

The Lingering Belief in Dualism

Rooted deeply in the beliefs of far too many people is the ancient idea that mind and body are separate and that health refers only to bodily states. Most definitions of health reveal it to be concerned only with the physical side of life. For centuries people have been led to believe that physical states are unrelated in any way to mental states. This dualistic conception of man is the source of many health problems. As long as it remains it will obstruct the scientific approach to the solution of these problems. Such a dualism leads people to believe that what goes on in the mind has no bearing on bodily conditions; conversely, that an illness is physical and unrelated to such psychological states as worry, depression, or irritation; that physicians deal only with the physical and faith healers only with the spiritual. It confuses many by allowing them to believe that the tensions of the psychological existence are not reflected in organic changes, whereas, as a matter of fact, they are.

The scientist for many years has known that mind and body are one. They cannot be separated. Influence upon one readily affects the other. Through the diencephalon there is an interchange of effect or stimuli which solidifies the unity of mind and body. Health is both physical and mental in its nature; there is truly no such thing as "physical health" or "mental health"—they are aspects of the same thing. The tissue of the organism is so differentiated as to allow for high specialization. Some tissues are used in psychological processes, others in the so-called physical. But health refers not merely to the state of the latter *but to the ability of all tissue to function in the achievement of life's tasks and purposes.*

PARTICULAR PROBLEMS OF THE SCHOOL POPULATION

The major health problems confronting the population as a whole have been described. School health education has its origins in these problems. It grows out of them and must constantly be related to them.

To deal with them directly and constructively is the only assurance school health education has that it is meeting the needs of the people. Many of these problems are reflected rather pointedly in the lives of school children and are important in forming the substance, the material, with which school health education works.

The "Developmental" View

Teachers and parents are, for the most part, interested in preventing misfortune from adversely affecting the welfare of children. Much time is spent cautiously and wisely trying to prevent disaster or discomfort. More difficult, perhaps, is the task of educating children and providing them with an environment which will enable them to find their fullest development. To provide gymnasiums and playgrounds and adequate physical education programs is more difficult than *not* to provide them. Without them development cannot take place in an urban setting. It requires much time, thought, planning, and careful instruction to develop positive creative attitudes toward life, toward the release of one's energies. It is much easier to let children drift along forming attitudes by trial and error and allowing the opportunity to assist them to go by default. To provide the setting for creative expression, to encourage creativity, to foster well-being—these are opportunities which we cannot afford to miss as we seek to aid in the development of productive generations. The limits of growth are unknown. Health educators play a significant part in promoting growth in all respects to its fullest potential.

The Preventive View

Equally important, perhaps, is the effort to prevent illness, handicap, and death. Surely, preventive effort comes easier to us. We can analyze the absences from school, find the absence rate for influenza, and seek out and apply ways to prevent that disease. Bronson Price describes this process as follows:

> School absences are our main source of information on morbidity in the school-age range. The most useful index obtainable from school illness data is the "absence rate," representing the proportion of school days lost due to illness. Another index, termed the "case rate," represents the frequency of separate instances of illness. The case rate is less important than the

absence rate but is essential if one wishes to compute the average duration of absences caused by a given illness.

For the absences attributable to illness, the number of days lost and the number of cases (instances) of absence are usually counted throughout a school year. When each of these numbers is divided by the number of children enrolled, one obtains an absence rate and a case rate representing the average child's experience per school year.[8]

Table 5 shows the mortality figures (causes of death), the ratio of mortality rates by sex, and the percent of death of all causes of the leading causes of death among the school age population. It is greatly surprising, for example, to learn that cancer (malignant neoplasms) is, next to accidents, the leading cause of death in the two age groups, 5–14 and 15–24. Diseases of the heart become significant among the high school group, as does suicide and homicide.

Accidents, however, are the most serious problem. They cause about one-half the deaths of school boys at any age and about one-fourth of the deaths of girls. Is there an educational answer to the rising tides of accidents?

But mortality is not particularly the greatest health problem confronting the school population. Morbidity (illness) and impairment affect vastly more children at all grade levels. Respiratory diseases are the leading causes of school absence for illness. The communicable diseases such as chickenpox and mumps rank second as causes of absence, with digestive disorders third. To control these, or to reduce their number, requires more of us in school health education than instruction. A full-blown program of instruction and services is necessary.

The problem of impairment, of crippling or otherwise handicapping conditions, is equally important in health education. How serious is this problem of impairment? In 1955 the Metropolitan Life Insurance Company, considering not only physical impairments but mental and personality disorders as well, reported that

> . . . orthopedic impairments are among the most common defects at the ages under 21. According to some estimates, the number of such impairments exceeds one million, but this probably includes deformities of a relatively minor character. About half this figure more nearly represents the more seriously crippled cases. Cerebral palsy and epilepsy each affect

[8] Bronson Price, *School Health Services*, U.S. Department of Health, Education and Welfare, Social Security Administration, Children's Bureau, 1957, p. 3.

TABLE 5. Sex Ratio of Mortality from Leading Causes in Specified Age Groups—White Persons, United States, 1955

Causes of Death	Death Rates per 100,000 White Males	White Females	Percentage of Male-Female Death Rate	Percent of All Causes White Males	White Females
		Ages 1–4 Years			
All causes	109.9	90.6	121	100.0	100.0
Accidents	32.9	23.7	139	29.9	26.2
Malignant neoplasms	13.1	10.6	124	11.9	11.7
Congenital malformations	12.2	11.7	104	11.1	12.9
Influenza and pneumonia	11.9	11.1	107	10.8	12.3
Gastritis and enteritis	4.1	3.0	137	3.7	3.3
All other causes	35.7	30.5	117	32.6	33.6
		Ages 5–14 Years			
All causes	56.1	35.6	158	100.0	100.0
Accidents	26.6	10.9	244	47.4	30.6
Malignant neoplasms	8.5	5.9	144	15.2	16.6
Congenital malformations	2.9	2.7	107	5.2	7.6
Influenza and pneumonia	2.2	2.1	105	3.9	5.9
Acute poliomyelitis	1.1	0.9	122	2.0	2.5
All other causes	14.7	13.0	113	26.3	36.8
		Ages 15–24 Years			
All causes	153.5	58.7	261	100.0	100.0
Accidents	100.8	20.1	501	65.7	34.2
Malignant neoplasms	11.2	7.3	153	7.3	12.4
Suicide	6.1	2.0	305	4.0	3.4
Diseases of heart	4.7	3.6	131	3.1	6.1
Homicide	3.5	1.2	292	2.3	2.0
All other causes	27.3	24.5	111	17.6	41.9

SOURCE: National Office of Vital Statistics, *Vital Statistics Special Reports*, Vol. 46, No. 8, and Vital Statistics of the United States, 1955.

from 200,000 to 300,000 people under age 21. The number totally blind at these ages is relatively small—less than 20,000—but there are at least four times as many with serious visual handicaps and a greater proportion with impaired vision uncorrected. There is also a high incidence of seriously impaired hearing, estimates varying from about 300,000 to more than 1,000,000, depending upon what degree of hearing loss is considered. The totally deaf, including mutes, comes to about 50,000.

Heart disease (chiefly of rheumatic origin) is a leading cause of impairment in young people. Although the incidence of rheumatic fever has been declining, the number affected by heart disease and acute rheumatic fever is variously estimated at 500,000 to 700,000. Diabetes, cancer, and other diseases likewise add considerably to the total of impaired young lives.

Large numbers of children and adolescents have personality defects or mental disorders that are a threat to their future life and happiness. The proportion requiring treatment is unknown, but a recent study in the New Haven metropolitan area indicated that about 3 per 1000 in the teen-age group were under psychiatric care. In the country as a whole, there are about 10,000 under age 21 in hospitals for mental disorders, exclusive of those for mental defectives and epileptics. Many more could be helped by early and adequate care. Impairment of intelligence sufficient to interfere with ability to learn is present in more than 1,500,000 people under age 21. Of this total, about one quarter have a very low order of intelligence. Approximately 40,000 at these ages are in institutions for mental defectives and epileptics.[9]

What do these figures mean for schools? What can one expect to find in any given community? One would expect to find the incidence of impairments varying with the economic and biological status of people and with the availability of medical services. And so it does. Likewise, the age of the group has a bearing upon the presence of defects.

As children become older, the incidence of impairment of teeth, tonsils, speech becomes less while defects of vision, nutrition, heart, hernia, and orthopedic handicaps become greater.

These handicapped children are to be found in every school in the land. By ones and twos, by dozens and hundreds, they present themselves for education. The school must receive them, teach them, help them grow and develop. The school must help them to live with or around their handicap—to compensate for it—and, whenever possible, assist them and their parents to remove it. These children deserve every protection against influences which might make the handicap worse just as children free from handicaps deserve protection against those influences in school which might produce disabilities.

In short, it may be fairly estimated that some 10 or 15 million school children out of our 50 million present sundry kinds of disability other than dental and other than the minor forms of emotional

[9] Metropolitan Life Insurance Co., *Statistical Bulletin*, XXXVI, No. 8 (August, 1955).

maladjustment. Some of these disabilities can be done away with entirely. Some can be alleviated or compensated to a considerable degree. Virtually all school children, the well and normal as well as the handicapped and maladjusted, have a need for health knowledge. The value of efforts in this direction will be found not only in the relief of the moment but also in the favorable effect upon the adult population of later years. A study by Ciocco compared the deviations from normal in a group of children of twenty years ago and today and found unmistakable evidence that uncorrected handicaps in childhood persist in adulthood at least to the point of serving to disqualify for military service. Ciocco concludes that certain disqualifying (for military service) defects already evidenced in childhood "emphasize the importance of child hygiene work for the health and welfare of the population. There can be no doubt that the health of the child will be reflected in that of the adult, and that all efforts which increase the physical well-being of children will result in health in adults."[10]

FORCES CREATING AND RELIEVING HEALTH PROBLEMS

Living things are at the mercy of many forces within their environment. In the great cycle that is life, living tissue, whether in a plant, an animal, or a man, reacts to these forces. Some of them are favorable and helpful to survival and growth; some of them are destructive. The hardy plant or animal survives the drought or fire or flood and lives on to another year. The weaker dies and may leave no seed to perpetuate the species. There is little the animal can do to withstand the unfavorable forces other than to seek shelter and to husband his food. The plant stands alone and without protection in its lone battle against the elements which would destroy it.

Man not only meets all of the problems of drought and pestilence but he seemingly creates some of his own. He alone has the means in the world of living things to foretell and plan for problems—an intelligence—but he uses his unique talents to devise forces which are as destructive as those of nature. It is insufficient that man learn how to build shelter, grow food, and escape a flood. He must also learn to pre-

[10] Antonia Ciocco, "Physical Growth in Childhood and Military Fitness," *American Journal of Public Health*, September, 1945, p. 927.

vent wars which are of his own making, survive slander which is a growth of his own competitive society, and eliminate ignorance which denies him his own discoveries of how to survive. It is a race between the forces of evil and the forces of enlightenment, between those things which kill and destroy and those which aid in survival and contribute to development.

Perhaps, in the last analysis, man is his own worst enemy because of his reluctance to grasp a clear impression of what he himself is. He seemingly exists upon living with a costly misconception—a view of himself as mind and body which all too frequently denies the "mind" the substantial support of a "body" that is able to contribute more to the fruits of the "mind" than it is allowed to do. This is dualism at its worst. When the "academician," the twentieth-century incarnation of Tennyson's St. Simon Stylites, denies the body to glorify the mind, considers matters of health beneath his concern, and refuses to live by what the science of man can tell him, then we have truly not merely an unfortunate victim of his own stupidity but an actual menace to the progress of other men.

Because such inadequate intellects are sometimes found in positions of educational responsibility they, through bias or ignorance, block off for others an opportunity to gain an adequate education in health.

Dualism is untenable and obstructive to a proper interpretation of man to himself. When it persists at the base of an educational philosophy affecting curriculum and administration and becomes obstructive to health education, then such a misconception jeopardizes human development.

Monism or unity, on the other hand, opens the gates to full development of an educational experience which would allow man to develop richly and fully. Modern health education is built upon the unified concept of man. Modern school health education accepts the concept, as described by Edmund W. Sinnott:

> The concept that both bodily development and behavior—the bases of body and of mind—are expressions, though in two different ways, of that self-regulation and goal-seeking evident in all activities of living stuff is thus no idle speculation. In its support there can be marshaled a body of evidence well worthy of attention and respect. To accept it is to cast aside the ancient dualistic conception of man's nature, which would have us think of him as two distinct and quite dissimilar beings. By it his unity can be

restored. Just what this self-regulation quality of living things may be in terms of matter and of energy is a problem for biology and can properly be attacked as such; but it is equally a problem for psychology if developmental processes have led to mental ones. Such a unifying idea provides a foundation on which the superstructure of both these sciences can be erected. The primary concern of each is protoplasmic purposiveness.[11]

In short, man seen as a duality creates his own problems. Man viewing himself as one, as holistic, as an aggregate of cells all having related purpose, is in a position to solve his problems by applying science to them.

SCIENCE AND EDUCATION AS FAVORABLE FORCES

There is a vast storehouse of information from the world of science which if made wholly available and if wholly used by man would increase the length and improve the quality of his life immeasurably. From the great laboratories of the world has come knowledge on infections, immunization, nutrition, cancer, atomic fission, and a host of other phenomena which have been explored with an eye to man's use in his protection or development. The great discoveries of the ages —Harvey's on the circulation of the blood, Pasteur's of the germ theory of disease, and others of equal importance—have added up to a vast amount of scientific information which, if man could receive and would use it, would help him to repel the forces of destruction and to live more productively and happily within his allotted years. The scientist now knows much more about human heredity than his fellows know and practice. It is known how to breed cattle for better strains. Similar knowledge is available on human stock but lies untouched because it is not widely dispersed or widely used. There is strong social and religious feeling which revolts against the use of too much science applied to human reproduction. But the information is there. Information is available about diphtheria and whooping cough, about teeth and accidents, about tuberculosis and heart disease, information which if understood and used would reduce these destroyers to the point where millions would be spared their effects.

Science has moved forward in the last two centuries with breathtaking speed. From all civilized countries, from hospitals and labora-

[11] Edmund W. Sinnott, *The Biology of the Spirit*, New York, Viking, 1955, p. 76.

tories, from experimental stations and clinical practice have come discovery after discovery bearing upon the preservation or enrichment of human life. No corner of darkness remains unattacked. The investigation proceeds relentlessly to push back the frontier and to reveal more and more of the nature of life and its processes. Such investigation cannot be stopped no matter how often the findings of the scientist are used by man for his own destruction. The inquiring mind of the researcher will constantly be productive of new discoveries useful to man in his war with his environment.

Step by quickening step, medical scientists are approaching major breakthroughs toward control and cure of our three most costly diseases—heart ailments, cancer, and mental illness.

We will learn how to prevent heart attacks. Drugs and possibly vaccines will be found to take the terror out of cancers. Chemical formulas will correct mental illnesses, and help keep human minds healthy.

Some decisive victories will come in each of these fields in five to ten years. There have been great forward steps in the physical sciences. Now all signs point to the next great breakthroughs, coming in the biological sciences which most directly concern human health and longevity.[12]

Or, as *H. H. Giles* says:

. . . However, the present state of ignorance is less than at any time in the past. The philosophers and the artists, the physical scientists, the social scientists, the biologists, have supplied a wealth of data and expert opinion which only awaits synthesis and application to make great advances possible. Yet that synthesis and application have been slow in appearing, due to the general lack of realization of how close is the relations between human purpose and human destiny. There has been a general acceptance of the importance of environment, for instance, but little realization of the extent to which man-made attitudes and institutions affect the form and direction of development within a given environment.[13]

To bring this vast array of information within the grasp of the ordinary citizen is the task of education. One cannot expect the scientist to stop his research to explain in popular fashion what his findings mean.

[12] Alton L. Blakeslee, "Where Do We Stand on Cancer, Heart Disease and Mental Illness?" *Today's Health*, XXXVI, No. 8 (August, 1958), 16.

[13] H. Harry Giles, *Education and Human Motivation*, New York, Philosophical Library, 1957, p. 59.

And yet unless someone does, the amount of unused information may become even more staggering than it is now.

At this point education must assume its full role. As the social institution devoted to the advancement of the culture of the race and to the directing of man's activities toward survival rather than disaster, the school stands strategically placed to convey to the population the facts and meanings of the work of the scientist. Both the educator and the scientist thus contribute to the advancement of culture—one by uncovering the nature of man and his world, and the other by revealing the facts and placing appropriate interpretations and applications upon them.

SUMMARY: A DEFINITION OF HEALTH

From this point of view, then, one can see health neither in terms relating to physical things alone, nor to the status quo. Health can only describe man in function and man in total. It can be thought of, in the words of the World Health Organization, as a "state of complete physical, mental and social well-being," provided "complete" and "well-being" imply function, development, and growth. Perhaps more accurately health can be understood as an index, a measurement, not of status but of function—for good or bad; if so, then health can be defined as *the condition of the organism which measures the degree to which its aggregate powers are able to function.*

SELECTED READINGS

Basowitz, Harold, *et al., Anxiety and Stress,* New York, McGraw-Hill, 1955.

Breckenridge, M. E., and Vincent, E. L., *Child Development: Physical and Psychological Growth Through the School Years,* Second Edition, Philadelphia, Saunders, 1949.

Brownell, Clifford L., *Principles of Health Education Applied,* New York, McGraw-Hill, 1949.

Byrd, Oliver, *Health Instruction Yearbook,* Stanford, Stanford University Press, Annual.

Cowell, C. C., "Health Education as Applied Social Science," *American Academy of Physical Education, Professional Contributions, No. 1,* November, 1951, p. 26.

Eaton, Joseph W., *Culture and Mental Disorders,* Glencoe, Ill., Free Press, 1955.

Fromm, Erich, *The Sane Society,* New York, Rinehart, 1956.
Gardner, Martin, *Fads and Fallacies in the Name of Science,* New York, Dover, 1957.
Grout, Ruth E., *Health Teaching in Schools,* Third Edition, Philadelphia, Saunders, 1958.
Gutwirth, Samuel W., *How to Free Yourself from Nervous Tension,* Chicago, Regnery, 1955.
Hurlock, Elizabeth B., *Adolescent Development,* New York, McGraw-Hill, 1955.
Ilg, Frances L., and Ames, Louise Bates, *Child Behavior,* New York, Harper, 1955.
Jackson, Shirley, *The Sundial,* New York, Farrar, Straus and Cudahy, 1958.
Metropolitan School Study Council, *What Schools Can Do: 101 Patterns of Educational Practice,* New York, May, 1945.
Montagu, Ashley, *The Cultured Man,* Cleveland, Ohio, World, 1958.
National Education Association and American Medical Association, *Health Education,* Fifth Edition, Washington, D.C., 1960.
National Health Committee, *Facts on the Major Killing and Crippling Diseases in the United States Today,* New York, 1955.
National Health Council, *Signs of the Health Times,* New York, 1955.
Paul, Benjamin D., *Health, Culture and Community,* New York, Russell Sage Foundation, 1955.
Redl, Fritz, and Wineman, David, *Children Who Hate,* Glencoe, Ill., Free Press, 1951.
Sinnott, Edmund W., *The Biology of the Spirit,* New York, Viking, 1955.
Stolz, Herbert R., and Stolz, Lois Meek, *Somatic Development of Adolescent Boys,* New York, Macmillan, 1951.
Turner, Clair E., *School Health and Health Education,* Third Edition, St. Louis, Mosby, 1957.
Wilson, C. C., "Report of the Committee on Terminology in Health Education," *Journal of School Health,* May, 1951, p. 170.
Winchester, A. M., *Heredity and Your Life,* New York, Vantage, 1956.
World Health Organization, *Technical Report Series No. 89,* Expert Committee on Health Education of the Public, Geneva, 1954.

PART II

THE CURRICULUM AND TEACHING

— 3 —

Planning for Effective Teaching

One cannot plan for effective teaching until goals have been established. We must know where we are going, what we are after. Planning for teaching requires some view of the outcomes desired. If it is only knowledge we want, we will teach differently than if we want to affect behavior. In health education one may require students to gain a knowledge of disease processes or parts of the human organism. But it requires much more teaching skill and thoughtful planning to produce an individual capable of taking charge of his own life to the point where he protects himself scientifically against disease. The teacher has to know a great deal about motivation to produce action, and action regarding one's health is more significant than merely *knowing* about health.

As Giles has said: "It is possible that we now have, if we could but put it into usable form, a large part of the knowledge needed to manage human affairs for purposes of good, for a fuller life for all, rather than for purposes of evil, of destruction of the fullness of life for all. The young sciences of man have given us research material in the past twenty-five years which has the most powerful meaning, if it were but generally known and used. Slowly it is beginning to be known, yet development of its understanding, and still more its use, is painfully behind the need."[1]

Attitudes of an Educated Person

A person well educated in health matters is one who *lives* as well as *knows*. He not only knows the basic facts concerning health and disease

[1] H. Harry Giles, *Education and Human Motivation*, New York, Philosophical Library, 1957, pp. 1–2.

but he takes all scientifically approved steps to preserve his health and prevent disease. He is not victimized by humbug or by the charlatan. He has sense enough to know the difference between falsehood and truth, between science and quackery, and, perhaps even more important, between a life dedicated to "just getting by," or "just well enough," and the life of abundant, vital, creative energy which lifts him above the commonplace and allows him to live at his best.

He seeks superior health, he wants superior performance, he practices a superior brand of daily living in full light of nature's provisions for an active life and finds his reward in energy to live most with what he has to live with. He does not seek mediocrity in living. He is not satisfied with merely absence of disease.

FUNDAMENTAL CONSIDERATIONS IN PLANNING

To achieve the goal stated above, to produce people educated in those terms, is not a simple task.

The teacher is confronted with many difficulties and unknowns as he attempts to organize for effective teaching. The following are some of the basic considerations—positive and negative—which will help the teacher in his planning.

"Health" as Motivation

How do people behave when they are faced with health decisions? Why is it apparently easier to take tranquilizers than to solve the problems which necessitate their use? Is good health as an idea very important in our systems of values? Apparently "health" itself is not a good motivating factor. We have become accustomed to appealing to young and old alike to do or not to do this and that "for the sake of your health." The admonition that such and such is "good for your health" is used indiscriminately to get children to go to bed, to eat their cereal, or to wear their overcoats. Many appeals are made in the name of health. Advertising channels use it liberally for sprays and soap, for mattresses and automobiles. The health of the nation is well solicited. One is urged on every hand to protect his health against the many dangers which beset him.

And yet, using health as a motive is a dubious practice, and the reasons are three: In the first place, the concept of health is essentially a

generalization and thus not well understood. Few people will do things for reasons they do not understand or understand poorly. Ask a child what "health" means and he will generally respond that health means "being big" or "eating my cereal." An adolescent will think of it as being "physically well." He will think of it in terms of recognizable and immediate experiences. It is more meaningful to a child to be encouraged to eat his fruit or drink his milk because he will be stronger if he does than to tell him blandly that such things are good for his health. Likewise, there is a better chance of getting overcoats worn in cold weather if one makes it clear that the "flu" will interfere with school activities which are fun. A specific appeal to a specific ongoing and important interest is much more likely to be successful than the appeal to a generalization which is not well understood.

In the second place, health should be presented in its true light as a means to an end rather than as an end. Health is a tool to be used. Only to the sick and the hypochondriacal does it become an objective. To the well it is something to use, to spend, to rely on through life. It is expendable in the sense that it is there to be used to attain life's purposes. Health is not mass, it is function. It is not something to husband but something to spend. Not that it is to be wasted. Good health is a condition of the organism to be used in attaining one's goals. Whenever the teacher sets health as an end in competition with other ends, then health will frequently come out second best. Many are willing to attain the other objective and let a little health go for the moment. Let the teacher show, however, that the performance of "health" activities will contribute to the success of the ends in view (i.e., sleep tonight will assure a better game tomorrow), and there is a better chance for getting the sleep.

Third, health as a motivator is of doubtful value because of the danger of making people into hypochondriacs. There are millions who seek alibis for failures, who yearn to be the center of the stage for even a fleeting moment, and who crave sympathy and affection. For many of these persons health is a sure way of attaining these goals. If you make people "health conscious," drum "health" into them from infancy, teach them to guard it, to do things or to avoid things because of it, they will develop the morbid interest in health characteristic of the hypochondriac and the bore. Health becomes a crutch, an excuse for failure. They have no claim to glory but know that the recitation of symptoms

will get an audience any time. They claim their share of sympathy with a vengeance.

Hypochondriacs too frequently result from excessive urging to do certain things "because it is good for your health." It is much better to find the reason for doing the thing in the direct result of its doing. *Health* as a word and as a motive should be used sparingly if at all in teaching about it. There are excellent reasons for getting sleep, being vaccinated, and eating well. They need not be obscured by using the single general term *health.*

Similarly, to teach people to be "health conscious" is a doubtful practice because the great physiological processes go on best without interference from the psyche. The loss of self-consciousness is desirable for the sake of one's effective functioning. This means that the teacher of health must see that the interest in learning about health matters is transferred from the self to the idea or activity which would be the beneficiary of the knowledge acquired. For example, one might transfer the interest in vitamins from their importance to growth to their relationship to playing hockey or basketball. In a similar way, one might transfer the interest in active recreation away from doing it "for one's health" to playing golf or tennis for the fun of it or for the sake of being with friends. The West Pointer maintains a rigid posture not by concentrating on the position of his visceral organs but by attempting a bodily reflection of an ideal of the Service. One seldom plays golf for health's sake, and to play tennis for "exercise" is suitable only for those who (1) must actively seek such therapy in convalescence or (2) must find an excuse for their love of the game.

There are times, however, when it is desirable to think consciously and act overtly in terms of health. We would want the camper to boil or chlorinate his water specifically to prevent disease. We would want children deliberately to give up the old swimming hole because its water is filled with *B. Coli,* and we would want any persons with early symptoms of an ailment to know enough to call a physician for aid. Because we sometimes must act consciously about our health, it thus becomes the responsibility of the teacher to give enough information describing the consequences of our acts to allow the learner to make intelligent choices. Health conduct is, after all, largely a matter of choice. We choose to smoke or not to smoke, to go to sleep or to stay up another two hours, to seek an early diagnosis or to wait a couple

of months to see what develops, to eat this or that, to cross in the middle of the block or to go to the corner. The selection is the student's. It is his life, his welfare, his happiness at stake. The business of the teacher is *to provide him with the data which will help him make these choices.*

To summarize, the objective of teaching everyone to "take a conscious interest in his health" can be badly overdone from several points of view. It can lead to a morbid interest in health, it can interfere with physiological function, and it can serve as a spurious reason for doing an otherwise reputable thing. At the same time students must be taught to handle reasons, facts, points of view, and data in such a way as to be prepared to make an obvious and important choice when serious matters are at stake.

Action in Relation to Personal Objectives

The process of teaching, as undertaken in school and college, assumes a relationship between what is taught and what the student learns or becomes. And yet it is clear that, in spite of the calm assurance of some that they know best how to teach and that any failure to learn is the student's fault, much remains to be known about the learning process. Even some professors in college who firmly claim that teachers are "born" not "made," and who are critical of the value of "methods" courses in education are often uninformed on how the individual learns and how learning can be made more effective. Much, if not most, of learning remains today as essentially empirical experience and what people are capable of learning has not yet been fully revealed by appropriate research.

What is known or intelligently guessed at is fairly represented by these further applications to health education:

1. Apparently the psychological state of readiness fundamental to action is related to personal desires, needs, or perception of self. A person will act only when he knows what he wants to do and is confident that the action he is about to take is a means to an end *which he himself desires.* For effective learning the student must be trying to reach goals that are important to him—preferably important now.[2] Edward W. Sinnott has made this important statement about goal-teaching: ". . . man is not only a rational being but fundamentally

[2] Henry P. Smith, *Psychology in Teaching,* Englewood Cliffs, N.J., Prentice-Hall, 1957, p. 243.

a seeking, desiring, aspiring one. From this comes the force that moves and guides him. *What* he seeks is widely various. It depends in part on his inborn predispositions but also, in no small measure, on the environment and training to which he is exposed. This possibility that his goals may be elevated and the power of his aspiring nature harnessed to good ends is what gives hope of making our social order a far better one than it now is."[3]

2. When we speak of *goals* or *desires* or *needs,* we are speaking of things which are fundamental to all living beings, to all protoplasm. We are not referring to whims or passing fancies. We are suggesting that for the teacher or any other "outsider" to *guess* what is going on in a child's mind (rather than to attempt to find out), and proceed to base the curriculum upon such guesses is fraught with error and waste motion. If he realizes that goal-seeking and directiveness in organisms is a basic fact and life's most characteristic quality, the teacher will seek out these goals and purposes and select the instructional material in relation to them. If this is done successfully, the impetus to learn need not and would not come entirely from the teacher. The learner would be *drawn* to the lesson rather than *driven* to it.

But why is anybody drawn to anything? And what effort will a person expend to arrive at his goal? These are questions important to the teacher. They involve motive, reason, purpose, ambition. A Freudian might say we are drawn to something, want it, and want to learn about it because it *gives pleasure.* Adlerian psychology would stress the *will-to-power*—people will learn because they want the power that comes with learning. Viktor Frankl describes what he calls the *will-to-meaning* as being of equal, if not more, importance than power or pleasure: ". . . in my opinion man is dominated neither by the will-to-pleasure nor by the will-to-power, but what I call man's *will-to-meaning,* that is to say, his deep-seated striving and struggle for a higher and ultimate meaning to his existence. This is his mission in life—his unique task—for there is a personal task waiting for each personality to be realized exclusively by him and by him alone."[4]

3. Others have described these drives, inner compulsions, and goals which are sought as *ego motives,* or our desire to maintain and bolster

[3] Edmund W. Sinnott, *The Biology of the Spirit,* New York, Viking, 1955, p. 77.
[4] Viktor E. Frankl, "The Search for Meaning," *Saturday Review,* XLI, no. 37 (September 13, 1958), 20.

our self-esteem and our prestige with others. There is agreement among psychologists that a dominant force in learning is our need for security and for success, and surely much of what is taught in school is accepted or rejected in terms of its relation to our own "security operations." If learning about heart disease comes easy, or bolsters our esteem, or gives us a feeling of knowing something important, then we are much more likely to learn it than if it bores us or has no meaning or no one else cares about it.

There is pride in learning. Our society respects the learned person. Teachers can, with frequent success, relate health material to the personal desire to know a little more than the next fellow. Or, in terms of our desire for security, the teacher or physician will have taught well whenever he explains *fully* the operation, the illness, or the prognosis so that the person can feel he has mastered that part of his experience. We feel secure in knowledge, especially knowledge which leads us to effective action.

Needs, Interests, and Problems

Teachable material in health education can be related to these drives just described. If the self-protective motive will stimulate learning about venereal disease, then the facts are taught in that vein. If it can be shown that personal growth or advantage will follow learning about nutrition, then the link between nutrition and the ego is made. Such things have meaning. They are interests, or they are needs.

Teaching, therefore, to be most successful, must be based upon and related to, must in fact be identical with, the needs and interests of consuming learners. There need be no confusion about this point. There are some who erroneously believe that accepting this principle will commit the teacher to the willy-nilly pursuit of every whim and fancy raised in the class and will prevent the attainment of any solid block of learning by the class as a whole. It does not imply this at all. It does imply, however, that any course and any curriculum must be based on the personal problems of the members of the group individually and in society. These personal needs will not be ignored in favor of general background, alleged problems, or the things the teacher thinks they should know.

People of all ages have needs. They have interests. Sometimes they are articulate about them, sometimes not. Sometimes students readily

reveal their interests; sometimes they hide them. The teacher of health must have the ability to dig them out wherever they are, to organize them for class purposes, and to use them as the material with which the class deals. (We will discuss later how these interests may be discovered.)

We can hope for a greater acceptance of health information if it relates to the real problems of students than if it is arbitrarily selected and unrelated to these problems.

This point needs clarification, for many people believe that "needs and interests of students" refer only to those of which the student is aware. This is not the case at all, and a better explanation is supplied by Stratemeyer as follows:

> Although what is learned is determined by the meaning the learner sees in a situation in the light of his purposes, this does not imply that an effective learning experience must be restricted to the purposes students can identify unaided or to the needs they express. Purposes can also be developed jointly by teacher and learners in a planning session. Here the teacher has a responsibility to add suggestions to those of the group, bringing to consciousness needs of which the learners have not been aware. Not to take such responsibility is to restrict learning experiences to the immature insights of the group.[5]

This view is put even more plainly by C. Scott Fletcher as follows:

> Of course educators must understand the learners. Of course they must be sensitive to their interests. Good teachers have always done this. But the educator cannot merely cater to "felt needs," else he is not an educator. In this sense he must not be like the waiter behind the cafeteria counter. The educator should have a vision beyond the vision of the learner. He should have firm convictions concerning what is important and what is good. He must take the intellectual and moral responsibility of opening up horizons and revealing alternatives of which the learner was previously unaware. He has no right to influence the *decision* concerning alternatives. But there can be no free choice unless alternatives are seen and their probable consequences explored. Not to reveal alternatives is to restrict choice. This, even more than violence and terror, is the device of the totalitarian.[6]

[5] Florence B. Stratemeyer, *Developing a Curriculum for Modern Living*, Second Edition, New York, Bureau of Publications, Teachers College, Columbia University, 1957, p. 71.

[6] C. Scott Fletcher, *The Battle of the Curriculum*, The Fund for Adult Education, 1958.

Needs, thus, may be felt or not felt. The boy of 14 may not feel the need for information about the prevention of venereal disease but he has such a need nevertheless and the teacher can *prove* the need by analyzing the facts and circumstances surrounding the life of a 14-year-old boy in relation to sex maturity and disease.

A boy may or may not be aware of an interest. If he is interested in heart disease to the point where he brings the subject up or seeks information about it, then we know he is interested. But his interest may be latent and aroused by a teacher or by others in the class by pointing out how and why heart disease may be important to him.

Similarly a student may or may not be aware of his problems. He may have offending perspiration and not know it. He may be excessively apprehensive and not be aware of it. He may believe that cold feet are quite normal because he has always had them and not know they may be related to a constricted aorta. So problems, like needs and interests, may be apparent or hidden. In any event, they must be discovered to serve as material for teaching. The important thing is to choose material to teach in health education which can be proven to have a bearing upon life, which meet needs which are there whether the student is aware of them or not.

Vital Subjects and the Student's Complacency

On what further grounds can we justify the satisfaction of personal needs in health teaching?

1. *People will not think vitally about a subject unless the subject is vital to them.* The material which is selected to go into a course in hygiene ought, according to this statement, to be material which is an intrinsic part of the life of the learners. W. H. Kilpatrick once said that learners must see and feel the utility and pertinence of what is being learned as a matter of present concern to them. Only thus will they intelligently join in the movement or apply the knowledge to an actual situation—the closer the conscious relationship, the better the learning.[7]

In view of these statements, the best way to get students to think vitally about their health problems would be to seek out those problems of living which are vital to them. Their interests and felt needs play

[7] W. H. Kilpatrick, *Twenty-Sixth Yearbook,* National Society for the Study of Education, Public School Publishing Co., 1928, part ii, p. 125.

just such a role. What would be the vital needs and interests of students, for example, in the subject of fatigue? They would probably want to know how best to go through the day without "that tired feeling," or perhaps the reason why a person feels "all run down." The problems close to their lives are those of common occurrence, rather than concern over the construction of lymph vessels or the formation of carbon dioxide and lactic acid.

To seek out the individual and class interests and use them for subject matter is to recognize the principle that the best learning takes place when the learner reacts vitally to the subject material. The immediate problem is most fruitful of results because of the identity of the subject-to-be-learned and the learner himself.

2. *Interests manifested by questions or outspoken curiosity represent the individual's attempts to maintain a favorable relationship with his environment.* We may call these articulate interests. They are revealed to the teacher by the spoken word in the form of questions arising out of some situation in which learning is taking place and in which the need for a new adjustment to environment has appeared.

Raup has described this as a constant effort on the part of the human being to maintain a state of favorable adjustment with his world.[8] Raup's contentions are based upon the universality of the characteristic of living things to be continually seeking a balance, or a "complacency," between themselves and their environment. How do interests or outspoken curiosities relate to the human desire to maintain this state of complacency? Suppose a student has been taught that smoking is injurious to health. This idea has, in the past, seemed perfectly reasonable, and the student has reached a state of quiet conviction on that point. One day he reads an advertisement in which it is stated that a prominent athlete smokes and that smoking has a steadying influence upon the nerves. He is immediately disturbed, for he feels that his former conviction is being contradicted. His complacency in the matter of smoking is upset. Then follows an effort to discover the truth. After all, is smoking really harmful? What evidence have these people when they say that smoking steadies the nerves? Doesn't smoking dull the brain, thereby upsetting the nerves? Dozens of questions immediately crowd into his mind, and he seeks some person, some source, which will give him satisfaction in the matter and help him solve his problem.

[8] R. B. Raup, *Complacency, the Foundation of Human Behavior,* Macmillan, 1923.

The questions or curiosities of this disturbed student represent his efforts to return to a state of complacency or stability with his world. He wishes most earnestly, sometimes desperately, to re-establish his mastery, his complacency in the situation and thus any teaching which helps the problem is avidly seized upon by drives from within and is accepted as helpful in the situation.

The implications of the conception of complacency to the teaching of health are numerous. We may assume that students are almost constantly faced with stimuli of varying sorts which necessitate some action if they are to maintain their complacency. Daily experiences bring changes from former ways in which living was best accomplished. The individual is in a more or less constant struggle to maintain his complacency. To seek out his problems, explain and answer his difficulties, lead him into better ways of making his adjustments to life—these are opportunities for a teacher of health.

Assume that students come to a class some morning in a state of complacency regarding food. They have had a good breakfast; they are generally well fed; their interest in food and nutrition is, for the moment, dormant. The subject of the day is announced but evokes no general response in their minds. If, however, this subject is stated in the form of a question, the complacency of the members of the class is disturbed to a certain extent. Their conception of some matter has been challenged, and they react by answering the question either to themselves or aloud. Thus, by thought-provoking questions they may be stimulated out of their complacency regarding nutrition. Then, with the discussion well established, each student may take from it what information he needs to restore himself to his former state of balance. If the complacency regarding the first question is not restored completely in the make-up of any one student, he may ask another question. Given the answer by his own reasoning or with the help of the teacher, his balance is then restored. By this continuous raising of questions, and the discussion of them, the subject of nutrition can be covered, time permitting, to the satisfaction of most of the students.

Suppose, however, that no question is forthcoming at the very beginning of the class hour. Does this mean that no teaching on the subject of nutrition ought to be carried on that morning? No brief is held for the stand that the teacher should wait until some need, desire, or whim appears in the mind of some student. To refuse to teach because no one in the class has any immediate interest in the subject at hand is

not reasonable in the light of the purposes of modern education. Dewey puts the responsibility directly upon the teacher in this situation: "If the teacher is really a teacher and not just a master or 'authority,' he should know enough about his pupils, their needs, experiences, degrees of skill and knowledge, to be able to share in a discussion (not to dictate aims and plans) regarding what is to be done and be as free to make suggestions as anyone else." Further, his "problem [the teacher's] is that of inducing a vital and personal experiencing."

The question arises here, however, as to the ability of any one person to learn much if he is utterly dependent upon the questions of others to bring out the discussion. In the question method, will there not be a waste of time for any particular individual? At times there probably will be. But it may be noted that the greater part of our learning takes place in social situations in which we listen to others discuss the problems of life. In the long run, the pooled interests of a group will probably make for progress, rather than for regression, in the learning of any one individual.

Health education, at best, is not a very exact science. This situation makes for perplexity in the student's mind. He may have learned one "fact" at home, a conflicting "fact" at school, and a third elsewhere. These apparent inconsistencies, when discovered, will usually be grouped around larger problems which then can become the principal segments or areas for discussion of the health or hygiene course.

In summarizing the foregoing statements in support of the use of student needs and interests, it must be clear that successful teachers will constantly relate the material to some experience of the student. School and college students are in the developing, expanding, questioning, thinking period of their lives. Life to them is a series of new adventures, challenges, perplexities, and they keep seeking new ways of doing things. They must continually make decisions and they normally seek the right to make their own. Health instruction, therefore, should be constantly related to this process of decision-making, should constantly aim to give the material with which these decisions can be made, and should constantly reveal consequences, open new ways of behaving, and lead the student into a life which can be guided by the wealth of scientific information available.

The converse of this point of view uses the learner as a means to an end. It uses him to serve some purpose other than his own. It has him

learn things for values not apparent to him. He is asked to "make a showing" or to "pass a test" or to learn "because I believe you should." Such values are psychologically not conducive to permanent and applied achievement. They may produce temporary results, but lasting values from the process are rare. Much of schooling is forgotten because it was meaningless. In health education when teachers do not make the material meaningful it is more than a missed opportunity. It is frequently tragic in its effect upon health. Kant's dictum is particularly pertinent here; he cautions us to "so act as to treat humanity whether in thine own person or in that of any other in every case as an end withal, never as a means merely." That is a command to make health teaching useful—not a mere collection of facts but a living experience in the study of life and how it is lived.

Intrinsic Versus Extrinsic Material

The needs, interests, and problems which lie along the pathways of goal-seeking give us the best clue to what to teach in health education. As a student moves through his world, develops new ideas, makes new friends, cultivates new values, solves new problems he constantly (1) meets blocks or hindrances to his desires or intended action; (2) seeks promising ways to remove the block, that is, to solve the problem; (3) investigates the subject and tries out one or more possible solutions; (4) finds the solution; and (5) acts upon what he has learned. This is the way we solve problems. This is the way we learn. This takes thinking, not merely rote learning.

The health teacher will apply this simplified description of learning to the selection of material to be taught in health education by discovering the students' on-going interests or activities, by helping them to find promising solutions, and by evaluating with them the success of their trials. Anything taught, any fact, any experience called up by this process which is used to solve a problem, to answer a need, to satisfy an interest, is intrinsic material and will be welcomed by the student. Anything unrelated to the problem, being learned just because someone else said so, is *extrinsic* material. For example, if we find our work interfered with by acute indigestion, we seek relief: we try water, soda, pills, and tablets. We try medical attention and possibly surgery. We apply the solutions. One works, and in the whole process we have learned much about medicine and quackery, about pills and tablets,

about food and food idiosyncrasies, and about causes of indigestion. The learning was intrinsic to the problem; it was meaningful and cogent. But it might also have been inaccurate. The teacher's role is to guide the student to a solution of his problem while building within him convictions and techniques which will be useful in other and similar problems.

Our problems are so numerous that they are not, of course, all of the same simplicity. Some are very complex and to solve them requires learning in many areas of living. One learns of marriage, for example, not by studying some of the rudimentary phenomena of sex life but by delving far into the factors which make for successful marriage. Economic, psychological, and social factors are all important. They are learned better when their relationship to the personal problems of marriage is apparent. Thus material is intrinsic when it deals with or helps solve a problem and its relationship to the problem is seen. It is extrinsic when it is learned merely for its own sake and without reference to any on-going activity or problem in the life of the learner. The material intrinsic to the solution of a problem has the better chance of being effectively learned.

MORE ABOUT MOTIVATION

We have suggested in this chapter that to bridge the gap between teaching and personal action the teacher must know a great deal about motivation, about how people learn, and about the drives or impulses which produce this learning. In health education, where we may be dealing with behavior situations that range from trying to dissuade a child from eating too much candy to helping a college couple iron out the wrinkles in a marriage, the teacher must be a keen student of the motives involved and the values which support those motives. If other children eat a lot of candy and the child values being a part of the group, then the teacher who explains ever so carefully about the effect of sugar on the bacterial placque on the teeth finds learning, at least action in terms of what we hope is learned, greatly limited. Or, to use another example, there are some who advocate the teaching of "correct" ways to brush the teeth in school. They would even have children bring toothbrushes to school and keep them in their desks or lockers so as to have them handy when "toothbrush drill" is taught. This offends many children and leaves them unimpressed because it is contrary to values

already established in which such an intimate thing as toothbrushing belongs in the privacy of one's own bathroom. Some health teaching can become ridiculous or offensive or both when it runs contrary to strong values previously established by family, social, or cultural groups. The teacher must be aware of these and adapt teaching about health accordingly.

Motivation and the Group

Even though organized teaching about health involves a class, there is no reason to believe that class-groups will be the dominating force in producing the group approach which motivate some to act. The class may be the wrong group. If certain sex practices are condoned—or condemned—in an out-of-class group, the advocacy of contrary ideas in class will leave little or no impression.

More hopefully the skilled teacher may be able to weld the individuals in the class into a group whose approval is important to the people in it. Class "spirit" and morale, a belief that "what we are learning in class is the real thing," are significantly important and should be sought by teachers in order to affect behavior favorably.

It may all have something to do with over-all social background. Our children are brought up in an atmosphere of debate and discussion. They hear forums, read of Congress, are aware of labor-management discussions, enter into disputations among themselves—they are, in effect, brought up in an atmosphere more democratic than authoritarian. Hence, when they bring to class preconceived ideas on health, smoking, diets, sex practices, or alcohol, they are frequently more likely to accept scientific explanations as persuasive rather than as authoritative.

The teacher may well attempt two things as he aims to utilize group opinion and group action. He should make every effort to find the values which cause a student to have the ideas he does. For example, a student may refuse medical care not because he is ignorant of what the physician has to offer or because he is ignorant of his own condition. He refuses because "where he comes from" going to a doctor is sissy. Or the high school girl will consistently dissipate not because she knows no better but because by so doing she finds the prestige she seeks which is denied her at home. Teachers who seek out these deeper motivations frequently attain valuable insights into how to develop behavior more favorable to the welfare of the student.

The second suggestion which is important in this connection pertains to the group itself. There is an increasing body of evidence from modern social psychology to show how effective group discussion can be in producing personal action. It is a far cry, of course, from the didactic lecture of a professor to 200 or 300 students (not one of whom he knows, nor do they know each other) to the small group discussion with the teacher participating in the search for a decision or solution.

Suppose a high school group is about to tackle the question of smoking. The chances are great that every member of the class has an attitude about the subject—some of the attitudes are more or less violent or emotionally based. Several alternatives are open to the teacher: (1) he can lecture on the subject giving one side of the controversy only; (2) he can give both sides; (3) he can authoritatively "tell" the students what and what not to do; (4) he can set himself up as a resource person and allow students to raise their questions with him; or (5) he can make the problem a truly group one with the main issue clear, the secondary questions discovered, small class groups or committees at work on the subissues, debate and discussion held freely and without rancor, and some group decision arrived at.

He has those and other choices. The last one described has great promise. It allows the individual to bring his own values to the group to test them in group discussion which must be kept free and not oppressive, and eventually to ally himself with the group as he seeks support for his changed ideas or changed behavior. It is essential in conducting classes on this discussion-decision basis to allow complete freedom for all to present their ideas, to work out their confusions and disagreements, and to formulate a conclusion based upon their experience.

The teacher's role is of great significance. He does not, as some erroneously believe, step out of the picture and allow students to come to a decision on the basis of their pooled ignorance. The teacher takes part, adds facts and opinions, helps formulate judgments, opens new resources, aids in finding evidence, arranges for resource people to be used. The teacher keeps the discussion free, encourages the timid, sublimates the overly aggressive and domineering, moves the group along to a decision or conclusion, but never usurps or dominates. By such group action many individuals find the all-important personal action more acceptable.

Motivation and Personal Worth

Recent studies have suggested that juveniles who steal automobiles or otherwise get into trouble with the law hold themselves at a rather low estimate. They downgrade themselves. They have a feeling they do not amount to much. They have little sense of personal pride or personal worth.

This would suggest that if teachers wish to motivate children to positive accomplishment, to effective learning, they should take steps to make the youngster feel important, or at least worthy. If misbehaving is related to low self-esteem, then the health teacher who tries to affect community-wide problems of drinking, tobacco, sex promiscuity, narcotics, or similar ones by providing sound scientific instruction in those areas, would do well also to build the egos of the offenders so as to make them feel better about themselves. It helps to give such children or youth opportunities to be of some useful school or social service, to be discussion leaders, to introduce resource people, or to set up the teaching aids. Apparently recalcitrant children or youth with problems respond better to good teaching when their self-esteem goes up.

Motivation and Emotion

Giles says: "In all aspects of learning, the emotional tone of the person is important. The best accomplishment is in part the result of joy in the activity. Poor learning is quite generally found to result after discouragement, such as a prediction of failure. The experimental evidence on this point confirms the hypothesis that a sense of growth possibility is a requisite to learning activity."[9]

This would indicate the need for a happy class, a class where accomplishment is noticed and rewarded, scoldings are scarce, censure is private, the teacher is pleasant, and the general atmosphere is joyful. Young people must be made to feel the world is their oyster and with diligence and hard work, they have an excellent chance to crack it!

Motivation and Adventure

Cartoonists to the contrary, "going to school" is not nearly the distasteful experience it was a century ago and learning has improved. Learning is more efficient, and students are learning more than ever.

[9] Giles, *op. cit.*, p. 50.

This is because the school is a more interesting place. It is not as boring as formerly. Its subject matter is more intelligently chosen in relation to life's needs and the school day is more flexible, allowing for field trips, study groups, and resource people. Libraries have more interesting resources in them. To study human digestion out of a book may have been dull but to see the process in motion picture, or to work on a problem of digestion in a laboratory would be more fascinating. To study germs from a textbook would be useful, but a trip to a nearby hospital to observe the precautions taken against infection stimulate a great deal more interest. Health education can be and should be adventuresome. Learning is more effective that way.

Motivation and Socioeconomic Status

Many studies over the years show the close relationships between socioeconomic status and health conditions.[10] There is more tuberculosis in congested areas, more alcoholism, more mental discord where living conditions are difficult. Crime studies invariably show incidence to be greatest where there is poor housing, bad sanitation, and overcrowding. There are many reasons for this, many effects of low income. People in many communities just give up, lose their hope, their ambition. Life has beaten them down.

It becomes very difficult, therefore, to motivate a child to learn better ways of living, to know something about nutritional standards, to study and learn about life adjustment if his home life is completely antithetical to all he has learned. The solution to such problems as these is not to be found in the instructional program although the program may help. The solution is found only in a broad community or civic approach to the removal or correction of the condtions which make the acceptance of scientific material by the students so meager.

Motivation and Time

A student needs time to learn about health for two reasons. First, short-term courses that meet once a week for six weeks are never as effective as the daily or at least three-times-a-week arrangement. Attention spans simply do not stretch over seven days. One period on

[10] See, for example, Anthony M. Lowell, "Tuberculosis and the Environment," *Bulletin of the National Tuberculosis Association*, XLIII, No. 1 (January, 1957), pp. 3–4.

"modern methods of disease control" or "sex, reproduction and marriage" is simply not enough time to devote to these subjects. When the student realizes that the school thinks no more of the subject of health education than to give it so little time in the curriculum, his motivation to learn drops perceptibly.

Secondly, the student must have time to practice what he learns. He needs time to study his health-education lesson; time to ruminate on what it means in his life; time to think through applications; time to talk things over. It would appear better, from the standpoint of motivation, to cover six units in one semester than to go faster over twelve units in the same amount of time.

Influence of the Teacher's Personal Values

It is axiomatic that the teacher should be enthusiastic about the subject if he wants to create the best atmosphere for learning. Conversely, if the teacher shows boredom, is lackadaisical, or actually deprecates the material, motivation will be at a low ebb. The teacher's own values, perceptions, prejudices, enthusiasms, and personal culture invariably influence the give and take of information and ideas in the teaching situation. A teacher who holds immunization low in his personal scale of values, or one who is biased against medical practice as we know it, will influence in subtle ways the learning of the class about such matters. The teacher who is a food faddist or an exercise "crank" will find it difficult not to influence the students in those directions.

CHANGING ATTITUDES AND BEHAVIOR

Teachers will notice considerable variation within any class in the health beliefs and behavior of the students. Each student brings with him what he has learned at home, church, playground, lower school, or television. If the commerical advertisement has indoctrinated him with the idea that all one needs for "irregularity" is a drug, or if mother is opposed to fluoridation of public water supplies for one reason or another, the child is likely to have these positions and argue them in the classroom. In finding dangerously unscientific ideas held by students, or faulty practice accepted as desirable, what does one do? The psychologist Henry P. Smith gives us this suggestion.

Studies of efforts that have been made to change attitudes of students lead us to two conclusions. First, regular classroom instruction does not produce significant changes. The attitudes of seniors, for example, do not differ greatly from those of freshmen in the same high school. Second, instruction that is aimed directly at creating change is very effective. For example, even one reading of an article that presented a strong stand in favor of capital punishment resulted in a significant increase in the number of high-school students who stated that they favored this method of punishment.[11]

In other words, we are more likely to correct erroneous beliefs and practices if we make a bold attack upon them. However, this would not indicate more of the "you listen to me and do as I tell you to do" authoritarianism. It means that the teacher should locate the beliefs or practices which are in error, organize a group study of the problem, provide wide and divergent resources for evidence, and skillfully bring all the scientific evidence available to bear upon the problem. Authoritarianism, from the teacher or anyone else, is less effective in changing attitudes than persuasion by discussion and submission of evidence.

LEARNING IN RELATIONSHIP

With the development of the *field theory* and Gestalt psychology, it is now believed that to see things in relationship is the most effective way to study. These relationships are of things to each other and things to the learner. Students do not, as a general rule, first learn generalities or abstractions about health like "the value of good health" described in broad moralistic tones, nor of a definition of health. Learning about a particular thing takes place by specific experiences with each particular subject and preferably if the relationship of that subject (smoking to cancer, for example) can be shown to another one (instead of "smoking is bad for you"). A great deal is known, for instance, about the physiology of muscular exercise, the kinds and types of muscles, and the importance of muscular exercise in life. Enough is understood so that certain broad conclusions can be made regarding the benefits of exercise. But in teaching the known facts about exercise and its place in life, the best point of departure is the interest of the student in active recreation, and

[11] Henry P. Smith, *Psychology of Teaching*, Englewood Cliffs, N.J., Prentice-Hall, 1957, p. 137.

not the conclusions or generalities reached by the physiologist after prolonged study of muscle action. Illustrating this point of view, syllabi can be found in which the order for discussion on the subject is: (1) structure of muscles, (2) how muscles act, (3) kinds of muscles, (4) involuntary muscles, (5) keeping muscles in good condition, (6) the value of exercise, (7) desirable forms of exercise. The generalization which physiologists have made regarding the structure of muscles (1) and the ways in which they act (2) was reached after a study of the more immediate and specific problems of muscular exercise (6) and (7). That is, the world learned about the structure of muscle *after* it learned about the action of muscles in exercise and about the specific effects of exercise upon the muscles.

A better way of approaching this unit on active recreation would be through the specific experience of the student in such problems as: Is swimming a good form of recreation? When should one learn to play golf? Should one in middle age indulge in strenuous sports? What sports are best for high school girls? Or, how can one keep in good physical condition? Some such recognizable problems as these would be a more acceptable point of departure and elaboration than "the structure of muscle" because they are related to something, mainly the life of the learner.

There are other good reasons to question the desirability of teaching generalizations or abstractions first. To know that digestion is principally an acid reaction or that there is phosphorus in bone may be interesting factual material to the physiologist or the anatomist but to the ordinary consumer, the student who merely wants help in solving his problems of living, these are not relevant facts until they can be shown in relationship to the known problem. They remain unrelated generalizations until their bearing upon some specific matter calls them up.

Clearly, then, the wealth of material now known about exercise should not be presented in its general divisions. It should, instead, be offered in terms of specific problems of the individual, such as the type of game which will develop muscles, the nature of muscle stiffness, the reasons for fatigue after exercise, and other specific interests of the learner.

What the adult world has learned about the prevention of disease in the individual has by now been classified into certain generalities concerning protective substances, blood function, and the action of

microorganisms. In learning about these things, however, one first approaches them in terms of the specific elements involved in the general statements. The learner's interests are in such health matters as catching cold, blood poisoning, and vaccination, rather than in phagocytosis, the side-chain theory, or the general notion of immunity.

The idea that a person has of an abstract matter is dependent upon the sort of situations in which that matter has been previously experienced. Symonds makes this perfectly apparent when he says: "A misconception that is found throughout all education is that learning proceeds from the general to the particular. . . . Conduct begins by the formation of separate skills and habits. . . . It is a curious anomaly that we take the end result in our own learning and try to make it the beginning in the learning of children."[12] In other words, the generalizations which we make about health, such as "the mouth is an avenue of entrance of disease," or "exercise is beneficial to health," are conclusions which are not readily apparent at first except by persons with trained minds or by those with an exceptionally high degree of intelligence. The generalizations or logical arrangements of experiences are continuous with, but represent the later stages of the learning process, and should not be used as points of departure.

Students have traditionally been taught to understand the best health practices only after they have studied the anatomy and physiology involved. Thus, to understand the importance of the balanced diet, they have had first to know of enzymes, amino acids, calorimeters, and nitrogen equilibrium. Or, in order to understand how to develop a wholesome adjustment of life, they have approached the problem through the fissures of Rolando, the centers in the medulla, or the cortical areas.

The wealth of material in human anatomy, physiology, bacteriology, and the other great sciences which have revealed the workings of human life is teachable *in explanation of a human problem. The material is largely wasted when given as new material and merely to teach the student the structure and function of his body.* It may even be said that there is no use at all in teaching the structure and function of the body unless the learner can use the material taught to further his development and solve his problems. If that is true, his problems and his

[12] P. M. Symonds, *The Nature of Conduct*, New York, Macmillan, 1928, pp. 316–317.

development offer the point of approach for the science. Otherwise the science may become wasted because, being unrelated to anything going on in the life of the learner, it is dry and dull.

Learning and the Total Organism

There is far too much evidence today for anyone to support the old-fashioned notion that learning involves the "intellect" alone. One doesn't "pour knowledge into the child to the limits of his absorptive capacity," as one uninformed scientist advised us to do. The brain does not operate all by itself. Learning is dependent upon the condition of the rest of the organism as well as the capacity of the intelligence. Learning is an interaction of the child with his environment and if we try to teach him something about his health, or physics, or literature, he will accept or reject, master or slough off, in terms of his health, his emotional state, his feelings, his morning breakfast, his ambition, *his everything*. No part or element within him is unrelated to the learning process. What affects him psychologically or intellectually affects him all over. He reacts as a total personality and thus the study of the dynamics of individual adjustment to environment, gives much light on how people can learn and makes a total program of health education of infinite importance to all of education.

Placing this factor of learning in relationship to others upon which learning also depends, Giles suggests that: "Best work depends on (a) internal stimulation due to effects of environment on organic periodicity, (b) an attractive goal, (c) the problem of choice being on the learner's level of insight, (d) the teacher or guide or companions being enthusiastic, generous, well balanced, or attractive, (e) a chance to be creative."[13]

THE AIM OF HEALTH INSTRUCTION

In planning for effective learning, a clear view of aim or purpose on the part of the teacher is essential. As we have said, the principal aim of school health instruction is to secure favorable behavior or conduct in all situations involving an individual's health. Broadly put, the aim of health instruction is to teach people to live well, to live scientifically, efficiently, economically, and happily. Behavior is what counts. In the

[13] Giles, *op. cit.*, p. 38.

last analysis it is what we do that is of greatest significance. As Durant says, "We become what we do."

At the same time, the acquisition of knowledge and the development of attitudes toward health are also of great importance. Health knowledge is, of course, the framework upon which are built attitudes and behavior. It is the grist out of which the judgments and the decisions are made. Knowledge is basic and important. "Had I *known* that, I would have done so long ago." Knowledge forms the base for action, and if the principal aim of health instruction is healthful behavior then knowledge must be acquired and given freely and plentifully as part of the experiential base from which a course of action is chosen.

To impart knowledge is the simplest thing to be done in the classroom. Students can be taught, tested for retention, and taught some more. Whether the learning becomes effective in the pattern of living depends in part upon the way the knowledge was acquired and also upon a great variety of other competing variables over which the teacher has little control. The teacher knows it is not enough to teach *about* vaccination. To be vaccinated against smallpox is the only thing that counts. All the knowledge about it in the world will not protect against smallpox. Action is the thing. But knowledge appropriately given is the first step in getting vaccination accomplished. Knowledge is sought even though behavior is the most important, the only important, outcome.

Health attitudes are also desirable to the extent that they facilitate the achievement of specific behaviors. An attitude is described by Webster as "an habitual way of regarding anything." How do you feel about healing cults? Are you against them in general? In favor of them? Do you believe that all drugstore cures are fakes? Do you put any stock in superstition? Habitual ways of answering these questions would be, presumably, attitudes; and yet they cannot be determined to exist really until the behavior or conduct of a person reacting in situations involving the subject is noted. One's attitude toward chiropractic, for example, would not be proved until one went or did not go to a chiropractor for treatment. One might be quite opposed to immunization and yet when going overseas submit willingly to typhoid and tetanus "shots." An attitude in students toward tobacco or toward continence can be built up through the acquisition of knowledge and experience but it is tested for its existence through observation of behavior. Verbal

or written statements of "how I feel about" things are fairly unreliable, often colored by "how do you *want* me to say I feel?" Hence as a working objective of school health instruction health attitudes are neither as important as knowledge and behavior nor as readily evaluated.

More specifically the objectives of school health instruction may be offered as follows:

1. To secure behavior (action, conduct, habits) favorable to a high quality of living, and to point the way to those acts which, if performed, will assure this high quality.
2. To assist in the development of a well-integrated personality, enjoying life with no reliance upon false superiorities or inferiorities but with a stability rooted in a capacity for accurate self-appraisal.
3. To clarify thinking about personal and public health matters; to remove superstitions, false beliefs, ignorance; and to substitute the accuracy of science, where available, for the darkness of falsehood and misbelief.
4. To facilitate the development of a security against the threats and destructive forces of the world through the acquisition of scientific knowledge, the formation of scientific attitudes, and the practice of scientific behavior.
5. To enrich the life of the community and commonwealth through the collective action of individuals well taught in the advantages of health measures to be taken for the common good.
6. To establish the ability in students to see cause and effect, to recognize consequences, and thus to preserve life and the fullness of it.

THE THREE PATTERNS OF INSTRUCTION

To accomplish this sort of education three patterns of teaching have evolved in school health education. Some schools use only one, some use two, and in some places all three patterns are in operation. *They are not mutually exclusive.* They are interrelated and can operate in the same situation. In the chapters to follow they will be described in detail. The patterns are direct teaching, correlation, and integration.

The Program of Direct Teaching

Direct teaching represents to many the best, most concrete, and practical way to offer instruction in health. It involves the organization and presentation of material from personal and public hygiene to

students who are enrolled in a class specifically to receive that kind of instruction. There are no divergent or competing interests and "health" is the "subject" to be taught.

The Program of Correlation

The program of correlation involves the use of other areas within the curriculum as vehicles by which health material is taught. There is much of personal and public hygiene which *may* be taught in biological sciences, social sciences, home economics, and other curricular areas. Whether it is or not depends upon the receptiveness of other areas to health material and the skill with which the correlation is brought about.

The Program of Integration

Integration differs from correlation in that it implies by definition an organization of learning experiences around a central theme. Integration has three applications in contemporary education: integration applied to the curriculum, integration applied to the total school program, and integration applied to the developing child or to the student. A completely integrated school health program is a rarity, not because it would not be desirable, but because its attainment is difficult in many current settings. When carefully and fully developed, it is the richest of the three patterns in terms of learning about health and living a healthy life.

SELECTED READINGS

Brownell, Clifford L., *Principles of Health Education Applied,* New York, McGraw-Hill, 1949.

Cantor, Nathaniel, *Dynamics of Learning,* Third Edition, Buffalo, Henry Stewart, 1956.

Cushman, Wesley P., "Problem Solving: An Effective Method for Teaching Health," *Journal of School Health,* XXIII, No. 5 (May, 1953), 154.

Foshay, Arthur W., Wann, Kenneth D., and associates, *Children's Social Values: An Action Research Study,* New York, Bureau of Publications, Teachers College, Columbia University, 1954.

Grout, Ruth E., *Health Teaching in Schools,* Third Edition, Philadelphia, Saunders, 1959.

Havighurst, Robert J., *Developmental Tasks and Education,* New York, Longmans, Green, 1950.

Havighurst, Robert J., *Society and Education,* Boston, Allyn & Bacon, 1957.

Hilgard, Ernest R., *Theories of Learning,* Second Edition, New York, Appleton-Century-Crofts, 1956.

Jersild, Arthur T., and Tasch, Ruth J., in collaboration with Committees of Teachers of the Public Schools of Springfield, Missouri, *Children's Interests and What They Suggest for Education,* New York, Bureau of Publications, Teachers College, Columbia University, 1951.

Kelley, Earl C., and Rasey, Marie I., *Education and the Nature of Man,* New York, Harper, 1952.

Kilpatrick, William Heard, *Philosophy of Education,* New York, Macmillan, 1952.

National Society for the Study of Education, *Forty-Ninth Yearbook, Part I, Learning and Instruction,* Chicago, 1950.

National Society for the Study of Education, *Fifty-Fourth Yearbook, Part I, Modern Philosophies of Education,* Chicago, 1955.

The 1947 Health Education Conference of the New York Academy of Medicine, *Motivation in Health Education,* New York, Columbia University Press, 1948.

Nyswander, Dorothy, "Changing Methods in Health Education," *American Academy of Physical Education, Professional Contributions No. 1,* November, 1951, p. 41.

Proceedings of the Eastern States Health Education Conference, *Psychological Dynamics of Health Education,* New York, Columbia University Press, 1950.

Strang, Ruth, "The Six Steps of Learning Healthful Living," *Journal of Health, Physical Education and Recreation,* February, 1956, p. 7.

See also "Selected Resources for Teachers" in Chapter 8.

— 4 —

Organizing for Learning

We have mentioned in Chapter 3 the three organizational patterns by which health material is taught in today's schools. As we come closer to the problem of putting down on paper the plans for teaching in a given semester to a given class at a given hour, we recognize that there are some problems of organization common to all three patterns of health instruction. Whether the study of health is offered students in a specific course, by correlation with other areas, or through an integrated plan, certain decisions have to be made concerning the organization of the material to be used.

The principal problem in organizing for learning is to know what material to select and to whom to teach it. There is much more material to be taught about human health than ever can be placed in a school curriculum. The storehouse of scientific information and of social problems is full and overflowing with teachable material, only a fraction of which can ever find its way into the school and college experience of a student. The need is to select the most important, most useful, and most interesting problems for the age group being taught.

Furthermore, considerable boredom and wastage result when students are asked to learn material which they covered long ago, perhaps in another grade. The timing can be so faulty as to cause the material to be overly simple and repetitious, or so far over their heads that little understanding results. To select and place material in a course of study so that it coincides with student readiness to receive it is a complex problem. It is not easy, for example, to develop the full judgment necessary to distinguish between what is repetitious in an area and what may be repeating yet represents progression within that area.

Some repetition, for instance, is desirable. It is implausible to believe that one can learn all there is to know about nutrition in one semester and need never reopen the study at a later year. No student can ever be taught all he needs to know about sex and social relationships in the tenth grade and have it safely assumed that he is then equipped to answer all problems the rest of his life. Health problems in life keep recurring, perhaps in a different form, perhaps with different intensities or meanings. They are continuous, furthermore; the child of 10 or the adult of 80 has problems which are important to the age and need to be met. It is erroneous to assume that, having received a good one-semester course in the physiology of the human body in the ninth grade, students will thereafter be prepared to solve all their problems of normal and abnormal function even as much as a year later.

The course-of-study maker must realize he has to undertake two processes at the same time: he not only must choose new material to be introduced at the right time but also must skillfully handle repetitive material, expecting and getting a higher standard of performance from the older students.

The existence of the three patterns of health instruction—direct teaching, integration, and correlation—has further complicated course-of-study construction. A problem like medical care might be planned by the health teacher as something of interest to the eleventh grade in the special course in health, whereas the social science teacher anxious to use the subject in a study of current social problems would find it acceptable in the eighth grade. Or a health teacher may have planned a unit of work on fads and fallacious beliefs as appropriate for the tenth grade only to find in the "core area" that the subject became a six-week study for the seventh-grade children. The human mind being the flexible thing it is and student avidity for the solution of problems being an ever-present phenomenon, it becomes impossible, under any conditions, to develop a sequential course of study which would introduce precisely graded material measured out by some formula of interest or readiness and free of all repetition. Such a formula simply does not exist.

Nor will segregation of material into logical categories of relationships be altogether satisfactory. Some teachers have made a practice of personal hygiene, community hygiene, industrial hygiene, physiology, thinking of the broad area of health as cut up into subareas like

anatomy, disease prevention, home care of the sick, and so on. Frequently courses are organized to cover each of these areas and then one course is offered each semester, either required or elective, until all the courses are "taken." The seventh grade, thus, might get anatomy and physiology "to lay the proper foundation for later understanding of health problems," when all the time that seventh grade was perfectly ready, able, and eager to deal with their contemporary problems of boy-girl friendships, or with their intensifying interest in public affairs. They would be ready to deal profitably with problems of community effort at disease control or recreational development.

As one "expert" put it many years ago: the seventh grade should have a foundation[1] course in anatomy and physiology, the eighth grade human physiology, the ninth personal hygiene, the tenth general and public hygiene, the eleventh safety education, and the twelfth home nursing. Faith in such convenient arrangements is not held by one who knows children's needs and how they learn and one who faces course-of-study construction with a modern point of view. The grouping of teachable material into those areas may be convenient for the teacher but may cause the material to lose much of its meaning and appeal for students. The categories are logical from the adult standpoint but divide the otherwise interesting material into too tight compartments.

It is better to mass all seventh-grade problems into the seventh-grade course whether they refer to physiology, safety, public health, or home nursing. If, more realistically, one "course" is offered in junior high school and one in the senior, then the materials of the course become those areas, problems, subjects, discussions, investigations, or experiences, regardless of their logical arrangement, which the students want and need at that age. If junior-high girls need to know something about home care of the sick, they should not have to wait until twelfth grade to get it. If the twelfth-graders are studying, as they most assuredly will want to, the pseudoscientific aspects of the manipulative cults, then the need for studying the anatomy of the spine will be apparent. The teacher could not rely upon the anatomy learned in the seventh grade!

[1] Such a foundation would use anatomy and physiology unrelated to any human problem and thus meaningless to students. This material should be taught but never by itself and without relation to on-going and familiar problems. It should be used *in explanation* of problems to be solved.

DEFINITIONS

Organization is most necessary. Material has to be selected, prepared, and placed for teaching. This is as true of health education as it is of other areas. Instruction given in health accommodates itself to the organizational structure of education and therefore, the principal features of this organizational structure are here defined.

The Course

The most popular and best understood teaching practice in our schools is to offer a *course* in something. If a college student wants to learn about geology he "takes a course" in it. If a high school boy wants to learn about science or mechanics, he enrolls for a course in physics or industrial arts or some other convenient and aptly named area of information. Over the years the educator has been able to cut our vast accumulation of knowledge into related pieces, offer them as courses or units, and out of them construct a curriculum.

And so it is not unreasonable that we should do the same with the study of health. A person ought to be able to "take a course" in it, and so he can. Great effort is being made to include the study of health at least once and preferably two or three times at the secondary-school level, and to arrange the elementary curriculum so that a child will have a more or less continuous experience in the study of healthful living. And in many colleges students may elect from a variety of courses in personal health, community health, nutrition, disease prevention, mental health, marriage and family problems, and others.

This sort of arrangement is known as the direct or specific approach to the teaching of health. It involves a time, a room, a teacher, probably a textbook—all the appurtenances of any other course. The class is required or elective, usually for credit, and meets regularly for discussions or field experiences or lectures or whatever devices the instructor chooses to use to teach the material. The intent is clear—to teach healthful living by itself without other curricular involvements, for the purpose of making a direct and undissipated attack upon the major health problems as they affect the lives of people.

Sometimes the term *course* is thought of as the affair the student attends or "takes," and the *course of study* is the document or plan the

teacher or administration sets to follow in teaching the course. A course of study is a rather complete outline and has been described by Schneider as "the planned and orderly arrangement of the content and statement of desires and intentions decided upon to guide the instruction of a given group over a fixed period of time."[2]

Sometimes one meets other interpretations of *course of study,* as in "What course of study are you following in high school?" "I'm following the commercial (or the college preparatory) course of study." But for our purpose here we will use *course* and *course of study* to refer to a planned and orderly arrangement of material to be taught or described in the Schneider definition.

Problem Area

Not all material to be learned falls conveniently into prearranged courses. Actually most curriculum makers today think of courses only in the last analysis after they have become familiar with the whole sweep and total of experiences which the school should and does offer.

The term "problem area" is commonly used to designate a broad category around which a large number of adolescent problems cluster. Lists of problem areas usually include broad areas such as *Personal and Community Health, Values and Beliefs, Vocations and Employment, Government, Home and Family Living, Leisure Time,* and *Intercultural Relations.* Presumably, the problems which fall in these categories reflect the needs of adolescents in our culture, stemming from the interaction of the individual and his environment.[3]

Problem

Within the problem area, many more specific problems are found. A course may cover a number of them. Cushman describes a problem as an interest or a need discovered by the student on the way to one of his goals. He says:

Many teachers do not recognize the difference between a problem and a job to be done. A problem requires thinking and research. A job is merely

[2] Robert E. Schneider, *Methods and Materials of Health Education,* Philadelphia, Saunders, 1958, p. 121.

[3] Lucile L. Lurry and Elsie J. Alberty, *Developing a High School Core Program,* New York, Macmillan, 1957, p. 20.

an exercise. For example: "How can I reduce safely?" is a problem that requires not only a collection of facts but a sorting out of information and applying it to the problem—reflective thinking is involved. However "make a list of vitamins and their best sources which would be included in the daily diet," is an exercise which requires copying from a book or memorization, but which has little application to life-like situations.[4]

Units

In health education we are familiar with two kinds of units: teaching units and resource units. There is not a great deal of difference between them. The resource unit, as generally conceived, has more to it than the simple teaching unit. The teaching unit is the one the students are more likely to deal with. It is built around a problem and usually starts out with a statement of the problem or topic to be considered. Then follows a statement of objectives—behavior or knowledge to be achieved through the study. Next would follow the detail of the problem in terms of questions or statements which set it up. This is the main body of the unit. After that comes the activities the students will perform, things they will do, books they will read, people they will talk to—all the likely resources they will use in solving the problem.

Then, at the end of the unit some culminating, "wind-up," or summarizing experience (like a panel discussion, or debate, or field experience) will be described. And finally, ways of evaluating the unit, of testing it to see if it is any good as an effective learning experience, will be described.

A *resource unit* is all this and more. It is used by a teacher or group of teachers to supply the material from which a single and relatively simple teaching unit can be formed. The general outline is the same as for the unit—but the sections devoted to the questions or statement of the problem, the activities, and the resources are much larger and contain a wide variety of these things from which the teacher and the class choose in terms of their local and particular needs, interests, and feasibility.

The emphasis on the resource unit is upon the *resources* and they are usually listed in full—texts, motion pictures, or valuable field experiences—from which a choice can be made.

[4] Wesley P. Cushman, "Problem-Solving—An Effective Method for Teaching Health," *Journal of School Health*, XXIII, No. 5 (May, 1953), 154, 156.

Examples of both of these kinds of units will be given later in this chapter, as soon as we learn a little more about what should go into them.

Curriculum

There are many definitions and kinds of curriculums. Perhaps the simplest way to think of curriculum is the total of the actual experiences which children undergo under the guidance of the school.[5] These experiences, things to do, things to learn, may be arranged by courses, periods, units, "broad fields," "core studies," or in other ways. The curriculum may be slanted toward a specialty as in the "engineering curriculum" or the "curriculum in home economics." Applied to health education it may well represent the sum of all the experiences relating to health which the school arranges for the students. As such, the health curriculum would range over all grades, all subjects or courses, and cover a wide scope of material to be learned.

Core

Although there are many versions of the word as it is used in education we will apply it here in health education as meaning a theme or a project involving many facets and problems, which is pursued by students in a given grade or class to a conclusion. Thus a "core study" might be related to the problem area of "Personal and Community Health" and involve a three- or four-month study of "The Science and Economics of Medical Practice." And such a core project might well be the business of the health instruction class, or by the "core group" as an entity by itself.

SELECTION AND ARRANGEMENT FOR TEACHING

It must be clear that the teacher who organizes and conducts a course in health instruction is in an important and strategic position. A number of decisions will determine the success or failure of the course for the students. Decisions relating to textbooks, references, field trips, and the like are significant, but the most critical decisions are those which determine the content, material, and areas to be studied. Upon the

[5] Hollis L. Caswell and Arthur W. Foshay. *Education in the Elementary School,* Third Edition, New York, American Book, 1957, pp. 248–249.

wisdom shown in making these decisions depends the acceptance or rejection of the material by the students. The teacher has considerable responsibility here and must face it with full realization of the potential consequences of the decisions.

The acceptance and use of the material in *living*, in *conduct*, in *behavior* is the primary aim of health instruction. To get such acceptance and use requires that the material presented be interesting, meaningful, and identical with the problems and needs of the students who are doing the learning. Much health teaching goes in one ear and out the other because the teacher has failed to recognize that students' problems are the most effective source of material and that to answer them gives the greatest hope of acceptance.

Finding the Problems

How, then, does one find student problems? First, by asking the students! Second, by inquiring into their lives to discover the problems of which they may not be aware or about which they will not tell. Neither the teacher, nor the textbook writer, nor the parent can safely say that he knows student problems unless and until he has explored their sources seeking objective evidence of their existence, seeking the problems themselves. No guesswork will do. No view from Olympus is safe. Even parents cannot always be counted on to reveal problems of their children. The problems and interests have to be ferreted out, and when revealed these problems then become the stuff out of which the modern functional health course is built.

The search for needs of students, for their true interests, and for their problems will lead the investigator to several different sources not all of which are equal in productivity. A teacher can explore many of them, and should, as a source of material for the course. Others, interested in research, can take more time than the teacher usually has at his disposal and make more thorough explorations. The following sources of student needs, interests, and problems have been tapped by those who seek to discover student needs.

STUDENT QUESTIONS

Given a fair and honest chance to ask questions, students will ask them in abundance. The questions, for the most part, are reliable indications of need. They are, in fact, needs themselves. More times than

not the student asking the question wants the answer for his own purposes, because it is important to him, or he would not have asked it. Curiosity emerging in the form of questions may be taken as evidence of need, and discussion can be arranged in answer to the problem.

There are several ways by which such questions can be gathered and, whenever they are gathered, they should be recorded and catalogued so as to be easily associated with a unit or problem area.

1. Students may be asked to submit, in writing, three (or any number) questions on a subject of the day, each day the class meets (or once a week, or once every change of unit).

2. Questions which students ask in class may be recorded by the teacher or an assistant at the time they are asked.

3. Teachers, counselors, nurses, and other personnel throughout the school may be asked to record (usually on 3″ × 5″ cards) each question having a health flavor which is asked of them. Such questions would provide an interesting supplement to questions asked in class.

4. A word list containing, say, 50 of the key or common words in health can be presented to an entire class with the request that they take the hour writing (again one question to a card) their personal questions stimulated by the words. It is surprising the number of questions which will be forthcoming when a priming suggestion has been given. The writer has collected something over 40,000 such questions from high school and college students by this method.

5. By using a health problem inventory[6] such as the one published by Dr. Oliver Byrd, the teacher can get a good indication of the range of interests held by students. On such inventories students are asked to check or circle the health topic or item they would like to have discussed. By tabulating the results the teacher can readily determine where the emphases of interest are in the class.

6. Conferences, interviews, and talking with students informally is an excellent way to get insights and information about their health problems. Information on home life, apprehensions, eating practices, and other matters will frequently come from the friendly conversational interest of a teacher.

Group conferences are also valuable. With friendly encouragement

[6] Oliver E. Byrd, "Health Problems of Significance for Course and Curriculum Construction," *Research Quarterly,* March, 1950, p. 5.

class committees or social groups will reveal their concerns so as to make them available for class use. Knutson uses this group technique with excellent results on an adult level and he says of it: "Group discussions on problems of alcoholism, obesity, and child care have identified critical and often intimate problems of adults. . . . Sometimes the group discussion may identify important health issues that are simply overlooked by the administration. I know of one junior college which has a practice of sponsoring a student-faculty workshop each semester for the purpose of identifying problems the students face and finding ways of solving these problems."[7]

7. Projective techniques can be used to discover the health problems of a student. In the stories he writes, his art work, his reactions to pictures, or his expressed fears or joys, the student will frequently reveal attitudes or actual problems.

8. Students will readily describe "the critical incident"—episodes, incidents, happenings in their lives which have health implications. James L. Malfetti solicits such incidents from his students by asking them to record specific incidents or problems according to the following directions:

> Describe not more than three actual situations which have been disturbing to you. We would prefer descriptions of situations that have occurred within the last six months; however, you may include those which happened previous to this period but which for some reason remain vividly clear in your mind. Include full details of the situation, and of the nature of the consequent disturbance. Do not feel restricted to choosing situations which you believe are within the scope of health education; choose situations of any nature. Be as explicit as possible in your description, including all of the circumstances which you believe are relevant.[8]

PARENTAL TESTIMONY

Parents can throw considerable light on important problems suitable for class discussion. They see the fatigue from too much school excitement, the developing bewilderment in face of adolescent sex problems,

[7] Andie L. Knutson, "Evaluating Progress in Health Education," *Journal of Health, Physical Education and Recreation*, XXVIII, No. 5 (May-June, 1957), 22.

[8] James L. Malfetti, "Selecting the Content of a Health Education Course on the Basis of the Needs of Students," *Research Quarterly*, XXVI, No. 2 (May, 1955), 164.

the hit-or-miss sort of dietary practice, and the worries and emotional strains attendant upon "keeping the pace." The teacher may not be as sensitive to these and similar problems as the parent. The following are some means by which the teacher can take advantage of the parents' insights.

1. Personal visitation. As often as possible, teachers should visit with parents and in general conversation attempt to get them to reveal the health problems which are important in the lives of their children.

2. Monthly or semester reports. The anecdotal report card or similar device can be used to stimulate parents to tell of health problems as they see them.

3. Questionnaires of various kinds. These have been sent to parents with the request that they answer such questions as: "Does your boy (girl) show signs of nervousness before tests or examinations?" "Does your boy average nine hours' sleep each night?" "Does your girl show evidence of fatigue as a result of her school activities?"

Or, to change the form, an invitation is extended to the parents to allow the school to assist them in the solution of problems, and to accomplish this the parents must indicate what the problems are. Forms are sent to parents worded, perhaps, as follows:

> The school wishes to cooperate fully with you in regard to the health of your child. Perhaps we could, in our classes, reinforce or add to your discussion of certain health problems. If you would indicate below what these problems are we would take them up for discussion:
>
> Principal health problems of my son, as I see them, are:
>
> 1.
>
> 2.
>
> Etc.

Or, in still another form, a check list of topics might be sent out with the request that parents check once for problems of interest as they have observed their children and twice for crucial or very important problems; thus:

x	1. Smoking
x	2. Late hours
xx	3. Self-medication

xx	4. Nervousness
	5. Eating irregularly
	6. Sleeplessness
	7. Drinking
x	8. Lack of concentration
	9. Etc.

4. Scheduled meetings with parents. Often a teacher will find parents so willing to contribute what they know of health problems that they will agree to meet with the teacher two or three evenings a month for a month or two to discuss them. The teacher will find this a revealing and helpful device. Parents will frequently talk freely and the teacher can record the principal problems as they are revealed.

OPINIONS OF QUALIFIED INVESTIGATORS[9]

Similar in value to parental testimony would be the opinions and observations of students of child life or of health education. There are those who spend their lifetime studying the nature of children's problems or who, because of their professional work, have excellent opportunities to gain insight into the problems of childhood and adolescence. Physicians, school counselors, favored and sympathetic teachers, psychiatrists, students of child development, public health and social workers—these and others could be used to reveal the problems of students as they, from their professional vantage points, have seen them.

Frequently the observations of experts will reveal a set of problems quite different from those uncovered by parents and there is often a nice supplementation of the one by the other.

MORBIDITY STATISTICS

What is the nature of the illnesses of the age group being taught? From what diseases do they suffer? What are the principal causes of their illnesses? If one could get such information locally and for the age groups being taught, one could make the illnesses the subject of discussion on the theory that if some of them are preventable by education then we had better find out what they are and bring them into class discussion. If, for example, tuberculosis is a serious problem among

[9] The most famous of such studies are perhaps those of Arnold Gessell of Yale and Robert Havighurst's *Developmental Task. nd Education.*"

adolescent girls and if there is anything about tuberculosis which, when taught, might help save some girl from contracting the disease, there is justification for bringing the subject into the course. Or, likewise, if it can be shown that there is an increase in the venereal disease rates in later adolescence, then to do a job in preventive education would require the introduction of the subject early in the high school curriculum. A study of morbidity tables will throw light on the urgency of many such problems of any age.

MORTALITY

A study of death rates for any age will reveal opportunities for education concerning the causes. If there is something teachable about the five or ten principal causes of death among college students, then most certainly the college should make the effort to instruct about them with the intent of preventing death, if possible, through alteration of conduct. Mortality figures, like morbidity, are revealing in that they show where important emphases in health courses might be put.

ANALYSES OF SCHOOL LIFE

School life itself produces health problems. There is no reason to believe that going to school is altogether a healthy experience. Many a child, as a direct result of having to go to school, now has impaired vision, or is nervous and emotionally unbalanced, or has tuberculosis, or contracted scarlet fever and now has impaired hearing. The school experience leaves its mark. It is only hoped that the mark is a good one and not a scar.

To find these sources or problems, to discuss adjustment to demands of homework, to examinations, to the social life of the school, to the complexities of friendship, and to analyze the school environment for sources of infection, for dirty locker rooms and showers, for unsafe traffic arrangements, for dangerous shop and laboratory facilities—these provide opportunities which should not be overlooked by any teacher hoping to make the instruction truly functional.

The activities within the school health program should be made subjects for discussion. Students are curious about the reasons for physical examinations, the effectiveness of immunization programs, and worth of weighing and screening procedures. The emotional climate or

atmosphere of the classroom itself bears most careful analysis as a source of problems in mental health.

ANALYSES OF HOME LIFE

What problems are created by the home? What sort of health conditions are found there? How do school children live? It has long been axiomatic that all the fancy teaching in the world about vitamins and balanced diets will not help much if, at home, there is scarcity or monotony in the meals. With delicacy and discretion the teacher must discover the health problems created by the home, the instabilities due to paternal neglect, the skin diseases from crowded bedrooms, the fatigue from noise and late hours, and bring the problems to the classroom for appropriate discussion and action. The teacher must visit the homes to see at first hand the sources or nature of these problems, must talk with public health and social workers who have seen the homes, must read contemporary studies on home life, and in every way attempt to collect data on health conditions within the homes of the children. Here is further intrinsic material for classroom use.

ANALYSES OF COMMUNITY LIFE

If there are great sources of infection in the community environment, if there are no playgrounds useful in combating idleness, if the water or food supply is unsafe because of lack of sanitary measures, or if the dust and dirt in the city air is such as to be a hazard, then these problems and others like them become proper material for attention in classes. They represent intrinsic material because they are problems confronting the students as they live. The teacher must be observant of community problems, must gather accurate data about them, and must read the many analyses of community life with sufficient insight to see the health problems involved.

ANALYSES OF LITERATURE

What do students read? Do Superman and his ilk create health problems or are the comic books innocuous in this regard? What books do students read? What ideas of romance, sex behavior, and love do they get? What do authors write about? What do newspapers and current magazines contribute to broadening the understanding and improving

the conduct regarding health? These are all cogent questions for the teacher. They represent an area of investigation for the one who has plenty of time for such research. The effect of all kinds of reading material upon the health of people needs to be explored and evaluated. It can be done by various means—by making word frequency analyses of different types of literature, by testing for current events relating to health, by tracing sources of delinquency, infection, or other deviations to determine whether they have a relationship to what people read.

ANALYSES OF MODERN COMMUNICATIONS

It is reasonable to believe that the influence of motion pictures, radio, and television on health and behavior is very real and may be for good or for evil. Films which deal intelligently with problems such as dope addiction or severe mental illness can enhance the understanding of people concerning medicine in particular, and health and science in general. Radio and television programs dealing with medical problems and the many shorts put out by medical organizations, universities, and similar sources give opportunity for the observation of human behavior, leave an important impression, and have a direct bearing on the health and behavior of students. The teacher would do well to keep posted on studies of the effect of modern communications on health; further, it would be profitable to make the health implications of current movies, television, and radio programs the subject of class discussion.

ANALYSES OF PHYSICAL EXAMINATIONS RECORDS

To make the findings from physical examinations the subject of classroom instruction is not always a plausible and profitable thing to do. To interpret such findings individually to the person who was examined is more effective in producing results in terms of correction or prevention. Nevertheless, some use can be made of the whole medical examination experience, including the data from the teacher observations in class instruction by discussing such matters as the purpose and frequency of examinations, their scope, and the meaning of the findings. Emphasis can be placed on the importance of follow-up action as the test of utility of the examination.

Group findings are sometimes useful but usually only in terms of the relation of an individual to them. To discuss the number of carious teeth

or infected tonsils found might be interesting, but such data are only valuable to the extent that they can be made meaningful to the individual who *has* carious teeth or infected tonsils or who may have them in the future.

To find these data the teacher needs access to the records at least in statistical form. The study of summaries of conditions found reveals the relative importance and extent of the problems.

ANALYSES OF SOCIAL RECORDS

To the extent that personal problems show up eventually in social data the study of the data is useful in gaining clues to these problems. For example, the divorce rate in most communities is alarmingly high. What are the causes of these failures in marriage? Juvenile crime rates are high. What causes relating to health may be cited and studied? Church membership among young people is proportionately not what it should be. Does this contribute to the psychological welfare of adolescents or not? These and other forms of data on social problems are fruitful for class discussion. They should be studied and used.

The foregoing sources of data on student health problems are constantly undergoing exploration. Teachers and research workers frequently publish additional data on their discoveries, results of local inventories, self-evaluation tests, school and community surveys. There are surely more techniques available for exploring than the twelve mentioned above. Very real contributions can be made in this area of exploring human needs. Without such discoveries health instruction remains something remote and blindly operating. Once human problems have been revealed, there remains the task of testing them for importance and cruciality, and then organizing them into a course of study.

TESTING FOR CRUCIALITY

If every question asked by students and every problem revealed by exploring the sources of health problems were to be used as teachable material, the health course would easily occupy one hour daily for all 16 years of the school and college span! The curiosities and problems of students concerning their health are endless. Some selection, therefore, must be made of those most suitable or most important for use in the time available in school. The revealed problems are not all of equal

importance or of equal suitability, and some measures must be taken to weigh the cruciality of the problems in order to bring to the classroom those which are of greatest significance and a discussion of which would be of greatest profit to the students involved. Several tests of cruciality may be used.

Frequency of Questions or Problems

One might think that the more often a question is asked the more important it is. At least its frequency shows widespread interest and thus its reception as intrinsic material is assured. The reverse, however, would not be true necessarily. Important questions such as "Is cancer hereditary?" or "Of what importance is sexual incompatibility to divorce?" might not be asked frequently and yet the evidence from other sources indicates the problems to be important, even crucial, to many people. A question such as "Is eating between meals bad for health?" will be asked over and over in spite of its relative unimportance to life, yet other questions more closely related to the attainment of a healthy life will seldom be voiced. The teacher must not, therefore, take frequency as the only criterion of cruciality. High-frequency questions may be important but there are a lot of others of less frequency which also should find a place in the course.

Judgment of Students

On the theory that the consumer should be consulted, the student should be asked every now and then to react to the importance of certain questions or certain segments of the course. This can be effected in many ways. For example, the teacher or research operator, given time, patience, and some money, could make a list of a hundred or more questions or problems judged important for the age group for whom the planning of a course is being done. Mimeographed copies of the list could be reviewed by several hundred students each marking the questions on a three-point scale "of great importance," "of importance," "of no importance," to "me"; or the same list could be given to the same or another group of students with the request that they judge them in terms of whether they think the subject would be of importance to or should be taught to others of their age. Then, by scoring, perhaps on a 2–1–0 basis, the questions could be rearranged in terms of their importance and a selection be made accordingly.

Students have judged whole areas of health problems in such fashion and thus have guided the selection of categories of problems for inclusion in the course.

There are other ways of getting students to judge cruciality. They will do so verbally, or they may be given outlined areas to select from and from debate and discussion among themselves come forward with statements as to relative importance. The important thing is to get student reaction. The adult is unsure of his ground unless he does.

Judgment of Adults

Some adults, principally experienced public health and social workers and physicians, have reliable judgments on the importance and cruciality of problems. Teachers and parents also have good judgment on cruciality, provided their experience is broad and long and not merely local or personal. Some problem may be of utmost importance to one parent because his one child is affected, but in the long or broad range it may not be crucial to others. It is probably better to sample all opinions, dividing the adults according to their status and comparing results. The techniques may be similar to those used on students. A list of questions or problems may be provided and the adult asked "Do you think a full discussion of this should be given to high-school (or any other age) students?" or "How important would you consider this problem to be to high-school students?" or "Would you recommend that this problem be given a place in a twelfth-grade course in hygiene?" "Check: Urgently recommend it _____. Recommend it _____. Do not recommend it _____." There are several ways of getting adult judgment of cruciality, and the view of the adult is desirable in selecting a few areas from many for class use.

Current Popularity of Problems

In times of local or national epidemics of disease it is important and worthwhile to work on the problem in the classroom The interest is that much keener and motivation better. Local problems of accident prevention, delinquency, leisure use, or any of several others which are susceptible to local variations and peaks of interest or concern may be studied effectively at the time of their public popularity. One must always be reminded, however, that the whims of public interest are unreliable and that there may be terrific public furor about one mad

dog giving one child rabies when ten children may have polio for want of a control program. Again, the leisure-time problem of the youth of the community may be much more serious and have nothing done about it while the community turns itself inside out to discuss the pros and cons of whether the school should teach health in mixed or segregated classes. The intensity of public zeal for a problem is not always an accurate measure of its cruciality in the lives of students.

A judicious balance of the four means of determining cruciality should be used. They have been presented somewhat in order of the weight which should be given them.

SELECTING THE PROBLEM

Eventually someone has to describe what will be included in the course of study. There are more health problems and health information than could be included in a school curriculum without crowding out other important areas. Direct teaching of health material usually must be confined to a part of a daily hour at the elementary level and a few hours a week in various semesters at the secondary level. This means that someone, some group, has to make the selection.

Ordinarily and most frequently the selection is done by the teacher. The responsibility for teaching the course is his, and he feels that he must determine what he shall teach. Sometimes groups of teachers make the decisions. Curriculum committees frequently will specify what they believe should be taught and when.

Even better is the group which includes students. It has become axiomatic that the student's needs and problems are to be used for the material to be taught. How better than to involve students in the selection process? If this is done, if students are invited to help choose, it should not be done haphazardly. The following steps to establish an effective student-teacher planning group are recommended:

1. A committee of students should be chosen early in the course, if possible the first day, to work intensively with the teacher in setting the course content. This committee should be representative of both sexes and of all social strata in the class.

2. The committee should next establish their own criteria to guide their selection of material. Stratemeyer and her associates recommend the following questions as helpful in establishing such criteria:

Is it something that we need to do—a responsibility or obligation that must be met?
Can it be done with little or no additional exploration—have we done it previously?
Is it important enough to be studied carefully? Is it something that we shall meet again?
Should it be considered by the whole class or referred to one or more individuals?
Should it be considered now or deferred until a later time? Will our present work allow us to start it now? [10]

3. The group should then examine studies which are available showing ranking of preferences and need and of the scope of health problems. They need to know what other students are thinking about.

As a clue to the interests of secondary school students the study by Joseph E. Lantagne is useful. Dr. Lantagne sought the interests of freshman and sophomore boys and girls, and junior and senior boys and girls with the following results and conclusions:

Ten Items of Highest Interest to Freshman and Sophomore Boys	
Juvenile delinquency	60%
Atomic warfare	57
Sex instruction	57
Tobacco and human health	53
Hit-and-run drivers	52
How to report accidents	51
How to use a gun properly	51
Sports vs. apparatus activity	51
Causes of suicide	51
Cancer	49

Ten Items of Highest Interest to Freshman and Sophomore Girls	
Juvenile delinquency	69%
Sex instruction	63
Safest age to have a baby	60
How to have good posture	57

[10] Florence B. Stratemeyer, Hamden L. Forkner, Margaret C. McKin, and A. Harry Passow, *Developing a Curriculum for Modern Living*, Second Edition, New York, Bureau of Publications, Columbia University, 1957, p. 381.

Causes of suicide	57
Preparation for marriage	57
Cancer	56
Lifelong care of the eyes	53
Dangers of sleeping pills	52

TEN ITEMS OF HIGHEST INTEREST TO JUNIOR AND SENIOR BOYS

Sex Instruction	63%
Sweets and dental decay	60
Juvenile delinquency	60
Tobacco and human health	59
Atomic warfare	57
Causes of suicide	55
How to report accidents	52
Speed and accidents	52
Cancer	52
Hit-and-run drivers	51

TEN ITEMS OF HIGHEST INTEREST TO JUNIOR AND SENIOR GIRLS

Sex instruction	77%
Preparation for marriage	73
Juvenile delinquency	73
Causes of mental illness	66
Causes of suicide	66
Safest age to have a baby	65
Cancer	62
Pregnancy and health	62
Lifelong care of the eyes	59
Mental health and marriage	58

The study by James L. Malfetti gives clues as to what problems concern students in the problem area of personal judgment.

THE PERSONAL ADJUSTMENT PROBLEMS OF THE STUDENTS

(Listed in order of percentage of the total of 1,101 descriptions)

Percentage	*Category*
25	Scholastic Situations
20	Sexual Adjustment

13	Emotional Adjustment
12	Vocational Planning
10	Home Relationships
9	Social Adjustment
5	Religion
3	Economic Adjustment
3	Motivation and Goals
1	Personal Health Habits[11]

4. The group should then ask some direct questions pertinent to selecting the health problems to be discussed and should begin to record these problems which qualify in terms of the foregoing criteria and conditions. Such questions as:

a. Can light be thrown on this problem by the means we have at our disposal?
b. What is the importance of the problem?
c. How crucial is the problem to our classmates?
d. Is this a problem in which the students have shown an interest?
e. Will discussion of this problem provide new experience and be worthwhile?
f. Is the problem timely?
g. Will discussion of it fit into our time schedule?

5. A general discussion should then follow with both teacher and students advocating the selection of problems they believe to have been proved important. Selection is made at this point in terms of grade level, interest, importance, and time and resources available. Problems not susceptible to school discussion should be eliminated and the schedule of progression should be made up for use in guiding study and discussion throughout the term.

If the teacher does this job alone he would go through essentially the same steps. Additional steps in course making follow here and on page 102.

ARRANGEMENTS FOR STUDY: THE APPROACH

Once the problems have been selected or the content of the course determined another critical step must be taken by the teacher—the way

[11] Malfetti, *op. cit.*, p. 166.

the material is presented to the class. If it is in the form of information to be learned, does the teacher begin by assigning chapters in a textbook, or by lecturing on the anatomy and physiology involved? How is the class introduced to the unit? What is their first contact with the material like? And how does the unit develop? How soon does it deal with the actual problems of the students?

This is called the *approach*, or the arrangement of material, and there are several which can be identified.

The Psychological Approach

The psychologically constructed unit of work is based on demonstrated or revealed student needs and interests. Its material is alive and meaningful. Its point of view is predominantly contemporary and it aims more at the solution of immediate problems than at the accumulation of information for possible later use. It teaches the science of human life in relation to the need for it and not as background generalizations which the student might use in his later life. Whatever use it makes of the detail of anatomy and physiology, of chemistry and bacteriology, it uses in *explanation of a problem*, as material helpful in understanding the matter at hand. It would never teach the anatomy and physiology of the human body *per se*. It would never begin a unit or chapter with the background of science. It would always use science where the science is necessary to explain a point in relation to a problem.

The psychological approach makes ample provision for student participation through reading, investigation, and discussion. The emphasis is on *doing* rather than merely *knowing*, although knowledge is prized as a guide for the formation of the principle or generalization which would culminate the study. Examples of psychologically arranged units are found on pages 103–116.

The Historical Approach

The historical pattern always begins its unit, chapter, or lecture by tracing the history of the subject to be discussed. The student is introduced to the history of a problem to give him a perspective on the present status or importance of the matter. For example, the historical approach to a college unit on bathing and cleanliness might develop as follows: (1) bathers of ancient Rome; (2) bathing among

primitive people; (3) the development of modern types of bathing; (4) changing the concepts of the need for cleanliness. It is doubtful whether such historical data are useful in getting the student to bathe or to be clean, and such information is, at best, pleasant material, providing possibly some interest and amusement but little else.

Or, in another series of health lecture outlines, the teachers begin the first day of the first week by introducing the subject, "Conceptions of Disease," with the demonic concepts, the four humors of Hippocrates, the theories of Sydenham and Pasteur, and the germ theory, presented in their historical order. The order of development is chronological but hardly germane to the daily problems of the student.

The Etiological Approach

The etiological arrangement is not seen as often in course-of-study organization as in unit or single-lesson construction. It is the cause-effect pattern. A cause and its effects or consequences are described. It is likely to be used most frequently in studies of disease and its control. For example, a college syllabus begins its second lesson (after the introduction) by setting forth "the causes of death from natural and unnatural means." Here are discussed, of course, germs, accidents, old age, and organic diseases. Next comes a consideration of germs, microbes, metazoa, and molds with full description of bacteria and cocci. From there the students study transmission of germs by air, water, milk, food, insects, and animals, and, if they are patient enough, they will eventually come to human carriers, typhoid Mary, tuberculosis, and cancer. A long and circuitous route!

The Anatomical-Physiological Approach

This approach to lesson planning is the favorite among those who disregard student interests. For decades health teachers have believed that all subjects should be introduced by laying the scientific foundations. Digestion could not be understood until the fundus of the stomach was located; and nervousness could not be discussed until the anatomy of the brain was explored! Libraries are full of health textbooks, each chapter of which spends the first half on anatomy and the second on student problems. For example, it is indeed rare if a chapter on the nervous system does not begin as follows: (1) structural arrangement of the nervous system; (2) cerebrospinal and autonomic; (3) the unit

of the nervous system—the neuron; (4) the reflex. Then, after the anatomy has been laid down, meaningless and unrelated, the text may discuss emotional control, worry, nervousness, adjustment, fatigue, vocations, and other cogent and important considerations.

Students frequently lose interest when the course is overloaded with unrelated and extraneous details of anatomy and physiology. They ask, "Why do we have to learn all that when what I had in mind was to discuss how to take school examinations without worrying?" Anatomical detail is most useful in explanation, never as unrelated and extrinsic background to be taught just because someone thinks it is good to know that the duct of Wirsung is in the pancreas or that there are so many main branches off the aorta. The material may be removed from an on-going interest, a need or a problem, and thus would contribute only partially and mostly by chance to the students' understanding of life. Such lifeless and meaningless teaching is responsible, in part, for the unpopularity of many health courses and for the slight impact which many health books make upon the reading public.

Examples of all these approaches are on pages 100–101. The psychological pattern, based as it is upon student problems, is the preferred approach in that it has the advantage of containing material intrinsic to the life of the learner and thus is most likely to affect behavior.

ORGANIZING FOR LEARNING

Now, the teacher or the teacher-student group is ready to put on paper the series of units of work which will become their blueprint, outline, or guide for the semester or year's study. The problems have been identified. They have been placed in categories of close relationship. The teacher or the group now needs to make the plan of attack on them.

The Working Parts of a Unit

A unit of work in health education (either a teaching unit or a resource unit) will usually have the following major divisions:

1. The title and statement of the problem
2. The objectives or outcomes sought in terms of behavior, knowledge and attitudes

3. The content, problems, or subject matter of the unit
4. Student experiences or activities which will amplify content or throw light on the problems
5. The culminating or "wind-up" experience or summary
6. The resources available for developing the unit
7. Evaluating devices

These will be described one by one in the following pages and examples given from units previously prepared and in use.

THE TITLE AND STATEMENT OF THE PROBLEM

This section will include, in addition to the title, a description of the problem and its scope and significance. It may describe briefly the needs upon which the unit is based, its relation to the larger problem area of which it is a part, and perhaps a statement of its setting in the health context of the population at large. It will suggest the grade level for which the unit is designed, the time to be given or recommended for it, and a suggestion or two as to how the unit may be started or approached.

EXAMPLE: "Resource unit suggested for Senior High Schools on the Services and Functions of the World Health Organization"

a. The health problems of the world affect all nations and the citizens of these nations, whether they are economically well developed or under-developed countries. So, the most enduring values of the WHO, to all nations, come from efforts to achieve lasting health gains through the elimination of disease-breeding conditions, the establishment of health facilities, and the training of health personnel. A vigorous, peaceful, productive world can arise from the abundant health and vitality of men and women; it can never grow under the existing burden of sickness, malnutrition, and poverty. In short, it can be said that no nation can any longer afford disease, the poorest least of all.
b. This resource unit is designed primarily for use at the senior high school level in direct health classes, but it may be used in high school classes in social studies, biology, general science, civics, or government. Since there is a limit to the time that will be available for a unit of this type it is anticipated that the teacher will select the procedures that best meet the educational needs of her class.[12]

[12] The Minnesota Department of Health, Section of Public Health Education, Minneapolis, Minn., February, 1958.

THE OBJECTIVES

Objectives represent the goals in learning or behavior sought in the unit. They are usually expressed in infinitives or participles, i.e., "To know . . . ," "To eat . . . ," "To discriminate . . ." objectives must be easily understood by students; they must be clear, feasible, and interesting. In resource units they may be expressed in more difficult or abstract terms. In any event they should be as specific as possible in their bearing upon the lives of students.

EXAMPLES:

a. A unit for elementary grades, entitled "Securing Needed Rest and Activity." These objectives are expressed entirely in terms of behavior and the form requires the use of participles.

Early Childhood	*Later Childhood*
Securing rest and exercise within family and school facilities—Seeking physical activity or rest as needed; knowing when tired and in need of rest; taking afternoon nap; following parents' instructions about going to bed; sharing in school rest periods; participating in school play periods; deciding what to play at school and at home . . .	Selecting activities which meet individual interests within family and school facilities—Sharing in decisions as to hour of going to bed; helping plan schedule of school day; taking advantage of opportunities in school schedule for relaxation, for activity; finding why parents and others insist on adequate rest and activity; making independent decisions in regard to fatigue and need to rest; planning out-of-school time to secure both active play and quiet activities

b. A resource unit for the ninth grade, entitled "My Food Needs."

Purposes:

1. To acquaint young people with recognized and accepted information and practices in the field of nutrition
2. To develop positive rather than negative attitudes toward proper eating habits
3. To develop or change habits or tastes and of food selection and to understand why certain foods must be included or excluded from the daily diet

[13] Stratemeyer, *op. cit.*, pp. 178–179.

4. To help young people to like what they eat rather than to eat only what they like[14]

c. A resource unit for high school, entitled "The Senior High School Student Looks at Dental Health."

Purposes:

1. To have students learn the value of the scientific approach in evaluating dental literature and dental products
2. To have students resolve the factors in selecting good professional dental services
3. To have each student responsible for making and keeping his own dental appointments and perhaps for paying for part or all of his dental services
4. To have the students study both the educational and service needs of dentistry in relation to himself, his family, and his community[15]

THE CONTENT, PROBLEMS, OR SUBJECT MATTER

This and the next section on experiences form the main body of the unit. The content is sometimes expressed in the form of questions, preferably questions raised by students themselves, or at least recognized by them as representing their interests. Other times the content is given in outline form. Whichever way the outline is developed the teacher should be ever mindful of the fact that ". . . learning is most likely to take place when the individual actually seeks to acquire insights and understandings for himself. . . . Many studies have indicated that knowledge of the facts alone is not sufficient to change behavior. The facts must not only be known, but they must be understood and believed. Developing understanding and belief out of knowledge of the facts requires some type of active participation by the student."[16]

It is the material in this section which will set the direction and determine the quality of the learning. If the problems or topics here are extrinsic to the life of the student, then the unit will not fulfill its purpose. If the material is developed in direct relation to the suggestions set forth in this chapter and Chapter 3, there is a much better chance for success. Here the problems which will challenge the student to study and investigation will be set forth.

[14] "Living with Yourself and Others—A Teacher's Guide to Health Education," Chicago Public Schools, 1956, p. 41.

[15] By permission of Miss Jean McCaner, Columbus, Ohio, 1958.

[16] Knutson, *op. cit.*, p. 22.

Furthermore there must be an obvious and direct relationship between this section and the next one on experiences or activities. The activities must *grow out* of problems and have no values or purposes different from them. Sometimes it is well to place the problems, the experiences, and the resources in three parallel columns so that the relationship is easily seen. And in any case the activities should follow the problems directly.

EXAMPLES:

a. A unit for twelfth grade or college freshmen, entitled "Consumer Spending for Medical Care."
 1. Are people spending more for medical care today?
 (a) If so, is this because of the rising costs of medical care or because people are actually taking more intelligent care of themselves?
 (b) Has the quality of medical care improved in the last twenty-five years?
 (c) How is the medical dollar spent proportionately between the services obtained?
 (d) What would be the average expenditure per year of a family of four for all goods and services associated with medical care?
 2. What relation do health and medical insurance plans have to medical spending?
 (a) What are the various types of insurance available and what are their purposes, coverage, and comparative costs?
 (b) Can the consumer control the quality of his medical care through insurance plans?
 3. What can the consumer, the individual, or the family do to keep at a reasonable minimum the cost of medical care?[17]

b. A unit for junior high school students on tuberculosis.
 1. What people are likely to be affected by tuberculosis?
 2. Is tuberculosis inherited? Does it run in families?
 3. Is tuberculosis transmitted? How?
 4. What parts of the body does tuberculosis affect?
 5. How long does it last?
 (a) Assignment of readings in text and references and view of "Are You Positive" or other good introductory motion pictures.

[17] Adapted from *Progress in Health Services*, New York, Health Information Foundation, VII, No. 10 (December, 1958).

6. How can I find out if I have tuberculosis?
 (a) Assignment: Investigation of nature of laboratory tests, sputum test, x-ray, field trip to clinic and testing laboratory.
7. Is tuberculosis curable?
 (a) The use of modern drugs
 (b) The sanatorium or hospital
 (1) Surgical aids in advanced cases
 (a) Pneumothorax and thoracoplasty
 (2) Educational benefits
 (c) Rest
 (d) Home treatment of tuberculosis
 (e) Rehabilitation
8. How can I prevent tuberculosis?
 (a) General health
 (1) Presence of tubercle bacilli
 (b) Early detection
 (1) Tuberculin testing
 (2) X-ray at regular intervals
 (c) Elimination of bovine sources
 (1) Testing of cattle
 (2) Pasteurization of milk
 (d) Is there a vaccine for tuberculosis?
 (1) Education of the public and discovery of the carriers: Various associations which carry on this work
9. What is the local and national tuberculosis problem?
 (a) Mortality and morbidity figures
 (b) Age groups affected
 (c) Financial repercussions
10. What are *my* responsibilities in control?
 (a) As a high school student
 (1) Keep in good health
 (2) Have periodic x-rays
 (3) Become informed on the health problem and its implications
 (4) Educate those around me to the problems involved and the latest medical developments
 (b) As a citizen in the community
 (1) Become informed upon the particular problems of the community
 (2) Aid in preventive and control measures of the community

c. A unit for primary grades (reduced from the original), entitled "A Breakfast Unit."

Finding the Problems (Determining the Need):

This unit resulted from an informal discussion on meals. We talked about the meals we liked best, and why these were favorites. The majority of the children mentioned either lunch and dinner, or dinner and supper. It was quite obvious that breakfast didn't seem to rate as either a very important or enjoyable meal. This left no question as to the need for improvement of the breakfast habits of these youngsters. An inventory revealed that many of the children needed to change attitudes.

Objectives:

1. To eat a good breakfast
2. To establish favorable attitudes toward better breakfast habits
3. To know what foods provide a good breakfast
4. To choose a variety of foods for breakfast

Procedure (Motivation):

Interest was aroused by placing posters, pictures of healthy, happy children, pictures of food, food models, and illustrated booklets about the room for the children to examine and read. This led to such comments as, "I had this for breakfast." "I like this for breakfast." "I believe I would like this and this."

We talked about the need for a good breakfast, and what happens when we do not eat a good morning meal. We discussed foods which were appropriate for breakfast and how these helped build us up and give us energy. The children expressed a desire for these so each child made his own wheel chart and his height and weight were recorded. We also used a film on the eating habits of children. We talked about the morning eating habits of people, showing the difference between those of birds, animals, and people.

Problems and Questions (Things we talked about):

1. Why don't some children eat breakfast?
2. Why do we need a good breakfast?
3. What is a good breakfast?
4. Do the breakfasts we eat measure up? If not, what shall we do?

Activities (Things we did):

To help us understand the problem of time, the children suggested making clocks. We counted the hours between the evening meal and breakfast and found the approximate number for each child. The children were surprised that so many hours had passed between the two meals. We agreed that everyone should be ready for a good breakfast.

We discussed the importance of getting up in time to eat a good breakfast before going to school. We discussed good things to eat and illustrated by posters and food models. These included fruit, cereal, milk, butter. Also suggested as an addition or substitution were: eggs, bacon, waffles, and hot cakes. Posters of a good breakfast were made by cutting pictures of food from magazines and arranging them attractively on colored paper. Reading charts such as the following were made: I had a good breakfast, I had cereal, I had toast, I had milk, I had orange juice. (The foods were illustrated with pictures.) We discussed what these foods do for us and why growing boys and girls need them daily.

When the subject of cereals was brought up, it opened the way for a very interesting study. Since we live in a section of the country which produces much wheat as well as other grains, we associated cereals with the grains from which they were processed. Small amounts of these grains were brought by the children; they also brought empty cereal boxes and placed them in the proper grain section from which they were processed, thus indicating what foods could be made from each of the grains such as wheat, corn, oats, and rice. The last mentioned grain, of course, is not grown in this section but the children wanted to include it with the cereals. We talked about cereals which needed to be cooked and those which come ready to eat.

We also had a little store which was stocked with empty cereal boxes, egg and butter cartons, milk bottles and cans, bacon boxes, fruit juice cans, and bread wrappers. Models were used for fruits. Playing cafeteria was a great delight for them. We used food models and attached a very small price to each. This provided some number experiences as well as experience in the use of money. We dramatized a conversation between a mother and her children during the planning of a breakfast; a scene contrasting the actions of a child who has had a good breakfast and one who has had little or no breakfast.

All of our activities and topics of discussion were the outgrowth of group planning. They resulted from reading, observations, films, pictures, and discussions of different foods and how they help us to grow.[18]

d. A unit on "Growing Up" is here shown, somewhat reduced as an example of what might be done in the sixth or seventh grade.
The Problem:

Personal and emotional problems resulting from irregular maturation

[18] Prepared and used by Mrs. Emma Senn Rogers, Kingfisher, Okla.

rates are common with pupils of junior-high-school age. Unless satisfactorily solved they can lead to serious maladjustment on the part of the child. Some of the chief methods for discovering the problems connected with growth and development are:

1. Observations of pupils in the classroom
2. Questions and problems actually stated by the pupils themselves
3. Observations of pupils during their play periods and at school recreation nights
4. Written problem lists from each pupil
5. Discussions at intervals with individuals and with groups

Some of the Objectives:

1. To help pupils understand that growth problems are normal
2. To help pupils understand that those who are "growing up" have new and puzzling problems and that there are ways of coping with them
3. To help pupils understand that large height and weight gains are normal growth stages

Procedure:

1. Approaches for arousing pupil interest.
 (a) Soon after the class had met often enough for me to gain their confidence each child wrote out some problems. From these we compiled a list of "common problems." It was very interesting to see the similarity of their lists. Some of the problems were: Why am I so fat? What makes me clumsy? Will I be more attractive later in life?
 (b) Class discussions were kept on a very informal basis with the result that they brought out many other questions.
 (c) The pupils were asked to bring in pictures of children of all ages to illustrate growth changes.
2. Specific questions and problems.
 (a) What stage of growth am I now in?
 (b) How can one tell what one's eventual height and body build will be?
 (c) How does the body grow and keep itself in good repair?
 (d) What is meant by the statement "growth is uneven"?
 (e) Why is one always hungry?
 (f) Are there any special physical requirements for success?
3. Activities selected and learning situations provided for helping pupils answer their questions.
 (a) The pupils kept a personal growth record during the study of the unit.

(b) Charts were prepared showing weight and body build forecasts.
(c) Pictures were collected to show that "Success and Fame Come to All Types of Body Build."
(d) The pupils were requested to bring in snapshots to show how each had changed in size and proportion since babyhood.
(e) Posters were made to remind others of ways to keep strong and promote growth.
(f) Families were studied to discover what characteristics might be inherited.
(g) The specific questions listed by the pupils were discussed in class.[19]

EXPERIENCES, ACTIVITIES, AND MOTIVATION

Obviously not all units lend themselves to the same approach or motivation. Some can well begin with a thorough exploration of the subject through class discussion. The teacher can skillfully open up the subject and get all the problems out on the table ready for organization and the planning of the attack upon them. Another unit may well be introduced by a movie or a speaker. The field trip may be the opening motivation for still a third. Frequently the "take-off" point is from some current event, an article in a popular magazine, an illness of a prominent person, or from the "teachable moment." The teacher and class will choose the method of developing the unit in relation to its character.

The activities or experiences are most significant. Frequently their use makes or breaks a unit. The absence of something to do in connection with the unit may reduce the study of it to boredom. The presence of activities, plus a wise selection of them, may enhance the value of the study tremendously and bring to light aspects of the unit which otherwise might be unattainable.

Whatever is chosen—film, trip, speaker, or debate—any and all of them must be germane to the problem and should be susceptible to individual choice. Not all students would want to make the same field trip, or interview the same public official. Varied experiences are useful.

EXAMPLES:

a. From a unit entitled "The Human Heart."
 1. Borrow a stethoscope from a physician or the school health office. Allow students to hear their own or another's heart beat. Wipe ear

[19] Prepared by Miss Mary Evelyn Miles, Caroline High School, Denton, Md.

pieces with cotton wet with alcohol after use by each student. Where do you hear it best? This is the apex of the heart. Describe how it sounds to you. Is it rhythmical? What causes these sounds? Does your own sound like that of others? Jump up and down about thirty times and listen again. How much of a change has taken place? How often does it beat per minute now as compared to its rate before?

2. Find your pulse in your wrist. Use your fingers, not your thumb. It is located back of the thumb where the radial artery passes over the radius. Note the following: number of beats per minute; strength of the pulse; regularity.

 Compare the pulse rate with the rate of the heart beat. Do they beat simultaneously? Why or why not?

 Find the pulse of another student. Answer the same questions as above. Pool the information gained by the class. What is the maximum and minimum rate? What is the average rate? Does this differ for boys and girls? How do pulses differ in strength, regularity and rate?

3. You may easily examine blood under the microscope. Obtain a good-sized drop of blood on the end of a finger. Touch a clean slide to the drop and immediately place it on the table. Now place the edge of another clean slide in the drop at a 45° angle. When the blood has spread along the full edge of the slide, slowly move it first one way, then back and you will have a blood smear. Allow it to dry in the air and examine under high power. Are red cells red? Are they all alike? What shape are they? Now stain the slide with methylene blue, wash off excessive stain and observe. What advantages are there to staining?[20]

b. From a unit on school safety:

Objectives	Experiences
How to walk to and from school safely.	The children learn how to walk to school safely. The teacher and the children discuss: The safe side of the street to walk on when there is no sidewalk. How to keep a safe distance from passenger traffic. The danger of darting into the street.

[20] Adapted from *Optional Related Activities*, New York, The American Heart Association, 1959.

Where to cross the street: *signals, cross walks, corners.*
Looking both ways before crossing the street.
Obeying the crossing guard.
Avoiding strange pets.
The danger of accepting rides from strangers.
The importance of going directly home from school.
The need of parental permission to visit friends.
Being extra cautious on rainy days.
Respecting private property.
The teacher and the children take walks to a traffic light or a cross walk.
They become acquainted with the crossing guard.
Dramatic play is used to work out safe practices en route to and from school.

c. From a unit entitled "Our Family's Health."
 1. Ask students to investigate any current radio and television programs concerned with presenting problems regarding the family's health. Discuss content and educational value.
 2. Select a committee to plan and report on appropriate lunch and dinner menus for a child suffering from a severe cold. Include suggestions as to ways to make the tray attractive.
 3. With the class, review local telephone numbers of fire and police departments (for emergency calls).
 4. Arrange a debate or panel discussion on the arguments for and against socialized medicine.
 5. If possible, ask volunteers to bring to class samples of industrial health and accident insurance blanks. Examine and discuss.
 6. On an unsigned sheet of paper, ask students to list everything they can remember now on the shelves of their medicine cabinets at home. Exchange papers and discuss items which are dangerous, nonessential, not labeled, too old, etc. Develop a list of items which should be included in a home medicine chest.
 7. Ask students to bring to a class newspaper or magazine articles dealing with the care of the mentally ill or with conditions in mental institutions. Discuss.

8. Discuss nursing as a career for men and women. Ask a class member to secure information and report to the class on requirements, needs, advantages of this profession.
9. If the home economics department in your school offers instruction in home nursing, ask a student who has taken the course to present highlights of the program to the class. If possible, demonstrate or describe such projects as making a back rest or a bed table from cardboard cartons.[21]

CONCLUSION OF THE UNIT

Study of a unit should be terminated by some special or summarizing way and not merely passed over. If the unit has been worthwhile at all, has engaged the class in many hours of study, has challenged their thinking, and has added to their knowledge and understanding, some plans should be made to bring it all together in some summary form. Perhaps this will be the location, by class and teacher working together, of the principles of healthful living which have emerged or been illustrated. Perhaps a summary of things learned at each stage of the unit will suffice. Or, a final committee report, or a debate arranged between members of the class which would highlight the main points of the study would be good. Perhaps a speaker brought to the class would effectively culminate the study, or a field trip with its follow-up discussion would cap the experience. The conclusion, or final experience, should be built around the question "Well, what have we learned?" and before moving to the next unit there should be no doubt as to the answer to the question.

EXAMPLE:

a. From a unit for the sixth grade on eating habits.
 1. Summarize what we have learned about the use of commercially prepared vitamin tablets.
 2. Present and discuss the results of the class survey of lunch selections in the cafeteria.
 3. What principles of nutrition have been developed by this study?

RESOURCES

This section of each unit would contain a list of all books, and other printed references, teaching aids of all kinds, and people who may be

[21] From "Living with Yourself and Others," A Teacher's Guide to Health Education, Chicago Public Schools, 1954, p. 116.

helpful in exploring the unit. In teaching units the resources listed would be only those actually used in the study. In a resource unit the list would be more complete allowing for choice in terms of suitability and availablity.

EXAMPLES:

a. From a resource unit entitled "Alcohol—One of Life's Major Decisions."
 1. Films:
 (a) "What About Drinking?" Young America, 18 East 41 Street, New York 17, N.Y., Guide, 1954, 11 min., b and w, sound, $6.00.
 (b) "Alcohol and the Human Body," Encyclopaedia Britannica Films, Inc., P.O. Box 358, Wilmette, Ill., 1949, 15 min., b and w, sound, $75.00, rent $3.50.
 2. Slides:
 (a) 66 Color Slides for Alcohol Education, Cleveland Health Museum, 8911 Euclid Avenue, Cleveland, Ohio, Guide.
 3. Pamphlets:
 (a) "Alcoholics Anonymous Meeting Schedule" (Includes the twelve steps), Central Ohio Group Fellowship of Alcoholics Anonymous, Room 210, 233 S. High Street, Columbus 15, Ohio, Spring, 1959.
 (b) "Is A.A. For You?" Central Ohio Group Fellowship of Alcoholics Anonymous, 1956.
 (c) "Exploring Alcohol Questions" (6 leaflets), Raymond G. McCarthy, The Publications Division, Yale Center of Alcohol Studies, 52 Hillhouse Avenue, Yale Station, New Haven, Conn., 1956.
 (d) "A Discussion Guide for Questions About Alcohol" (No. 1, 2, 3), Raymond G. McCarthy, The Publications Division, Yale Center of Alcohol Studies, 1956. 50 sets for 30¢.
 (e) "Facts About Alcohol," Life Adjustment Booklet, Raymond G. McCarthy, Science Research Associates, Inc., 57 W. Grand Avenue, Chicago 10, Ill., 1951. Quantity prices on request.
 4. Teacher References:
 (a) "The Physiology of Alcohol," Harold E. Himwich, M.D., *Journal of the American Medical Association,* 163 (February 16, 1957).
 (b) "13 Steps to Alcoholism," Morris T. Weeks Jr., National Council on Alcoholism, Ne York Academy of Medicine Building, 2 East 103 Street, New York 29, N.Y.

(c) "Facts on Alcoholism," National Council on Alcoholism, Inc., 1957.

(d) "It's Time to Study the Facts About Teenage Drinking," Wisconsin Council on Alcoholism, 111 E. Washington Avenue, Madison 3, Wis.

(e) "Youth and Alcoholic Beverages: A Report," Licensed Beverage Industries, Inc., 155 East 44 Street, New York 17, N.Y.

(f) "Recent Trends in Alcohol Education," Raymond G. McCarthy, *Association for the Advancement of Instruction About Alcohol and Narcotics Newsletter,* III, No. 3 (December, 1957).

(g) "Some Random Thoughts On Alcohol Education," Arthur V. Linden, Ed.D., *Journal of School Health,* XXIX (January, 1959).

(h) "What We Should Know About Alcohol—A Manual," Mildred H. Weiss, Cleveland Health Museum, Cleveland, Ohio, 1957.

5. Additional Pupil References:

(a) "Fundamental Facts Concerning Beverage Alcohol," *Quiz Book,* Lewis C. Berger (ed.), 145 N. High Street, Columbus, Ohio, September, 1956.

(b) "Alcoholism—A Sickness That Can Be Beaten," Alton L. Blakeslee, Public Affairs Pamphlet, 22 East 38 Street, New York 16, N.Y., 1952. 25¢.

6. Textbooks:

(a) Goldberger, T. H., and Hallock, Grace T., *Understanding Health,* Boston, Ginn, 1956, pp. 405–416. For the student.

(b) Johns, Edward B., Sutton, Wilfred C., and Webster, Lloyd E., *Health For Effective Living,* New York, McGraw-Hill, 1954, pp. 363–374. For the teacher.

(c) Zoethout, William D., and Tuttle, W. W., *Textbook of Physiology,* St. Louis, Mosby, 1955, p. 680. For the teacher.[22]

EVALUATION

Each unit should be evaluated during its development and at its conclusion to see how effective it is—whether it is worthwhile, whether it is producing results. Evaluation is geared to the statement of objectives and seeks to find out whether they have been attained. Sometimes units can be evaluated by standard tests, other times the class itself will devise its own means of evaluation.

[22] Prepared by Joyce Haignere, July, 1957.

Because Chapter 9 is entirely devoted to this subject, we will not elaborate further here.

THE SCOPE OF THE CURRICULUM

In one sense the scope of learning in health education is as wide as life itself. Children at any age are learning something about health every day and from a wide variety of sources. Health education being a study of life and its processes admits but few limitations to its scope and in broad outline would involve all problems, interests, and needs relating to the development of emotional stability, sexual maturity, physical development, adjustment to illness and disaster, and a good share of the problems associated with the emerging personality. To locate these problems, describe them, pinpoint them for classroom use, find those suitable for each grade and sex, and then arrange them in sequential development is a task requiring the greatest of skill in curriculum construction.

Although we can not present such an outline of graded and selected topics or problems from first grade through college because it would require a volume in itself, we can at least suggest a sequence of action which will guide a teacher or a group of teachers to the formation of a sequential curriculum. The steps would be something as follows:

1. The responsibility for curriculum formation in health education should be established. This could be one person in a school, but preferably would be a committee large enough to represent those with the major interests in the health of students. The committee would thus involve representatives from the teaching staff, medical group, parents, and administration. If the community is large enough to have a central staff with a curriculum consultant, then that person should be intimately associated with the curriculum in health education.

2. Objectives of the project should be clearly stated. What grades are involved? Will they seek the health problems from a study of available sources or merely decide the curriculum content out of their own experience? What research will they plan to do? Will the committee need any financial resources to achieve their objectives? The task confronting the person or committee should be clearly defined.

3. If original research on the discovery of needs or problems is to be done, the sources to be explored and the instruments to be used must

be determined. The research project must be described fully from purpose to budget.

4. The principal published sources for discovered problems, grade, objectives, and for assignment of objectives, problems, or topic to grades should be consulted.

Many cities have established grade objectives for every area of learning. This sort of experience from other localities should be consulted. For example, the Board of Education in Columbus, Ohio, published an "Agreements Booklet" the function of which is described as:

> . . . an attempt to add orderliness to the elementary school curriculum through the sequential arrangement of goals. These agreements have evolved over a period of years through the continuous experimentation and study of many teachers and administrators in the Columbus Public Schools. Teachers are encouraged to use and interpret these agreements in the light of the demands of their own situation.
>
> Objectives mentioned in the chart can be best attained by teachers through utilizing (1) the experiences, needs, and interests of the learners, (2) the information secured from intelligent home and community relationships, and (3) the realistic curriculum approach that provides a well-rounded program for the individual child.
>
> The expectancies are stated from the child's viewpoint; emphasis is placed upon outcomes that may be anticipated at the various grade levels. Furthermore, the development of certain broad values is encouraged at each grade level and in all areas. These values should evolve simultaneously with the teaching of the specific learnings.[23]

Then from the same publication one sees objectives chosen appropriately for each grade from kindergarten up in the areas of reading, language arts, arithmetic, social studies, science. safety, health and physical education, art, music. Such a statement of objectives in every area and for every grade cannot fail to be exceedingly helpful in outlining the scope of the health education effort in each grade.

> Understands safety precautions when walking or riding a bicycle—Recognizes and observes all necessary safety precautions at home, at school, on the playground, and in the swimming pool—Avoids accepting unsafe dares—Is aware of the contribution which personal cleanliness, sunshine, sufficient exercise, proper foods, and good posture make toward good health—Becomes aware of proper room ventilation and temperature—Knows the im-

[23] Columbus Board of Education, "Agreements Booklet," Columbus, Ohio, 1957.

portance of appropriate and properly fitted clothing—Understands the importance of periodic medical and dental check-ups—Begins to enjoy more group activities involving competition, and is introduced to simplified relays —Continues activities in individual proficiencies such as rope jumping and self-testing activities—Participates in singing, folk dancing, singing games, and dramatization—Enjoys helping to plan and participate in recreation with his family.[24]

5. Scope, grade by grade, having been shown in point 4, selection must be made for the local situation. This can be done by the committee or some research could be done with local students to determine the crucial or most helpful problem. (See page 93.)

6. Selection having been made of topics and grades, unit construction next follows. (See page 102.)

7. And finally, for complete acceptance of the curriculum within the school system, the following groups should be allowed to study the tentative plans: (1) a parent group; (2) the teachers who will be involved in it, (3) the school administration including the board of education; (4) representative students from all grades.

TRANSITION

Having described the basic considerations with which we should be familiar in planning for teaching (Chapter 3), and presented suggestions for organizing for learning (Chapter 4), we are now in a position to discuss some specific matters pertaining to course organization. Chapters 5, 6, and 7 will discuss the organizational and special problems inherent in the specific or direct course, in correlated plans, and in the integration of health material with core or central study plans.

SELECTED READINGS

Alexander, William M., and Halverson, Paul M., *Effective Teaching in Secondary Schools,* New York, Rinehart, 1956, pp. vi, 564.

Anderson, Vernon E., *Principles and Procedures of Curriculum Development,* New York, Ronald Press, 1956, pp. 468.

[24] As an example of such graded objectives the above are listed by the Columbus publication for the third grade in the area of safety, health, and physical education.

Association for Supervision and Curriculum Development, *Creating a Good Environment for Learning,* Washington, D.C., N.E.A. 1954 Yearbook.

Association for Supervision and Curriculum Development, *What Shall the High Schools Teach?* Washington, D.C., N.E.A. 1956 Yearbook.

Beauchamp, George A., *Planning the Elementary School Curriculum,* Boston, Allyn and Bacon, 1956.

Branom, W. T., "A Survey to Determine the Attitudes, Habits and Knowledge of Hillside, New Jersey, High School Students in Regard to Dental Health," *Journal of School Health,* XXVI (October, 1956), 231–235.

Byrd, Oliver E., "Health Problems of Significance for Course and Curriculum Construction," *Research Quarterly,* XXI, No. 1 (March, 1950), 3–10.

Byrd, Oliver E., "The Health Curriculum: 500 Topics," *Journal of School Health,* XXVIII, No. 3 (March, 1958), 89.

Caswell, Hollis L., and Foshay, Arthur W., *Education in the Elementary School,* Third Edition, New York, American Book, 1957.

Dale, Edgar, "Children's Questions as a Source of Curriculum Material," *Educational Research Bulletin,* Columbus, Ohio, Ohio State University, February, 1937, p. 57.

Ellenwood, James Lee, *Questions Parents Ask,* New York, Dutton, 1955.

Ennes, Howard, "Teachable Moments," *International Journal of Health Education,* I, No. 2 (April, 1958), 70.

Gallagher, J. Roswell, and Harris, Herbert I., *Emotional Problems of Adolescents,* New York, Oxford University Press, 1958.

Gilbaugh, John W., *How to Organize and Teach Units of Work in Elementary and Secondary Schools,* San Francisco, Fearon, 1957.

Grout, Ruth E., *Health Teaching in Schools,* Third Edition, Philadelphia, Saunders, 1958.

Gruhn, William T., and Douglas, Harl R., *The Modern Junior High School,* New York, Ronald Press, 1956.

Hymes, James L., Jr., *A Child Development Point of View,* Englewood Cliffs, N.J., Prentice-Hall, 1955.

Lantagne, Joseph E., "Comparative Analysis of Items of Interest in Marriage and Parenthood of 4,000 Students in Junior and Senior Colleges," *Research Quarterly,* XXVII, No. 2 (May, 1956), 194.

Lantagne, Joseph E., "Health Interests of 10,000 Secondary School Students," *Research Quarterly,* XXIII, No. 3 (October, 1952), 330.

Malfetti, James L., "Selecting the Content of a Health Education Course on the Basis of the Needs of Students," *Research Quarterly,* XXXVI, No. 2 (May, 1955), 163.

Minneapolis Public Schools, *A Guide for Teaching Health, Physical Educa-*

tion and Recreation—Kindergarten-Grade 6, Rufus A. Putnam, Superintendent of Schools, 1958.

Oliger, Lorreta K., and Convery, Helen J., "A Unit of Work on Foods," *Journal of School Health,* April, 1955, pp. 108–110.

Stratemeyer, Florence B., Forkner, Hamden L., McKim, Margaret G., and Passow, Harry A., *Developing a Curriculum for Modern Living,* Second Edition, New York, Bureau of Publications, Teachers College, Columbia University, 1957.

Stuart, Frances R., *Classroom Activities,* Washington, D.C., American Association for Health, Physical Education and Recreation, 1956.

Science Research Associates, Inc., Chicago, all *Life Adjustment* booklets.

Willgoose, Carl E., *Health Education in Elementary School,* Philadelphia, Saunders, 1959.

See also "Selected Resources for Teachers" in Chapter 8.

— 5 —

The Specific Course

The most familiar of the three patterns for offering instruction in health (as described in Chapter 3) is that of direct teaching in the specific course. It is possible to organize much of the subject material related to health into time periods and to distribute this material over the school years in terms of suitability to age and maturity levels just as has been done with arithmetic or science or other subject areas.

It is thus possible to "take a course" in health. In fact in secondary education or at the college level, it may be possible to select from a variety of such courses.

At the elementary level there may be 20 minutes or so a day set aside for studying health, and in the junior high school a period a day for a semester or so will be devoted to the subject.

This sort of an arrangement is known as the direct or specific approach to the teaching of health. It involves a time in the school day, a room or laboratory (preferably *not* the gymnasium), a course outline or syllabus, a teacher, and probably a textbook. The class is usually required, sometimes elective, and it meets regularly for the satisfaction of its basic purpose: to give instruction in the science of healthful living.

CHARACTERISTICS OF A GOOD COURSE

A good health course at any level will have certain characteristics. It will be a course in which students actively participate in fact finding, discussion, field experiences, and forming conclusions. It will not consist wholly of a series of lectures on health topics. The lecture allows for virtually no active participation by the students, and although it is

productive of some knowledge the learning from a series of lectures is less likely to be useful, functional, and lasting. The discussion method is much more acceptable to students in that it allows for participation which is more conducive to effective learning than is passively receiving from the rostrum.

A good health course will keep its students busy. It will have assignments growing out of or in preparation for the problem at hand. It will allow for extraclass experiences, will take the students afield in search of solutions to problems, will involve reading in more than a textbook, and will use aids to teaching, such as motion pictures, whenever they contribute to learning.

A good health course will deal with problems of everyday living. It will seize upon a contemporary drive for funds for cancer research and make the subject of malignancy a study for several days or weeks. It will deal with local traffic problems and current disease rates. It will seek to explore issues involved in contemporary health legislation and will debate the issues currently noted on the subject of medical care. It will fearlessly and yet with dignity explore contemporary problems of friendship, marriage, and heredity, and it will not hide its head in the sand while the great problems of delinquency, venereal disease, or divorce sweep over the school population.

A good health course will allow the students to share in its planning. A teacher can never be sure of his omnipotence. He may not know "what they should be taught." "They" may have ideas and their ideas should be discovered and used. This is true not only for day-to-day teaching but in the selection of the larger problems which make up the whole course. Historically a turning point in the popularity of health instruction was reached when teachers ceased being all-wise and all-dominating in the selection of material and recognized the equity of students in the determination of health problems to be discussed. Health in both school and college has been an unpopular "subject" in many places. It has been dull, boring, unproductive, and a waste of time for its students, largely because the teacher presumed to choose the health material to be taught and thus the students found little of interest in it.

With these four characteristics a health course is well started on the road toward productive popularity and effective function in the lives of students.

THE RANGE OF MATERIAL

There is an almost unlimited range of material in health education from which may be selected suitable content for any grade. There is easily enough material available to occupy curriculum time every semester of every year. Research within the various sources of problems as described in Chapter 4 has revealed not only the large areas but considerable detail of the problems within each area. For example, in 1950 Oliver Byrd suggested 21 large categories of health problems, based on his research of significant problems:

1. Health as a Social Accomplishment
2. Health as a Social Problem
3. Nutrition and Health
4. Excretion and Health
5. Exercise and Body Mechanics
6. Fatigue and Rest
7. Mental Health and Disease
8. Heredity and Eugenics
9. Infection and Immunity
10. Chronic and Degenerative Disorders
11. Habit-Forming Substances
12. The Care of Special Organs
13. Safety
14. Health and the Physical Environment
15. Scientific Health Services and Facilities
16. Family Health
17. School Health
18. Occupational Health
19. Community Health Services
20. International Health
21. Trends and Possibilities[1]

It is possible to take any one of those large areas and examine the detail of its content. Byrd, for example, shows the third category "Nutrition and Health" to contain the following suggested subcategories:

[1] Oliver E. Byrd, "Health Problems of Significance for Course and Curriculum Construction," *Research Quarterly*, XXI, No. 1 (March, 1950), 4–10.

3. Nutrition and Health
 - 3.19. Health hazards with foods
 - 3.20. Importance of minerals
 - 3.21. The vitamin problem
 - 3.22. Health aspects of protein
 - 3.23. Fats in human nutrition
 - 3.24. White bread and epilepsy
 - 3.25. World food conferences
 - 3.26. World food needs
 - 3.27. Sweets and dental decay
 - 3.28. Cooking and food values
 - 3.29. Nutrition and body weight
 - 3.30. Facts about milk
 - 3.31. Nutrition deficiencies
 - 3.32. Nutrition during pregnancy
 - 3.33. Practical selection of foods
 - 3.34. Effects of storing, freezing, canning, and dehydrating on food values[2]

Such categories and subcategories are suggestive of what others may find and use. They are not all-inclusive in themselves but are useful in pointing up the wide scope of health instruction and showing the teacher the problem of selection with which she is confronted.

Grade Placement

Because, after all, selection of material in terms of the grade and maturity level of the student is the most critical problem of all, both teachers and students need all the help they can get in selecting the material for each grade in terms of local needs, interests, and maturity. There being no national course of study, teachers should consult their own state or local departments of public instruction to determine whether a suggested course of study is available which will recommend when and for how long any given subject should be taught. For example, Harold J. Cornacchia recommends the following distribution (with particular reference to California) from kindergarten through the sixth grade (Table 6).

But there is no standard practice in health education regarding either the content of health courses or the grades in which they shall be taught. In elementary education some health instruction is usually

[2] *Ibid.*, p. 3.

TABLE 6. Tentative Scope and Sequence for K–6 Health Education Guide

	Grades						
	K	1	2	3	4	5	6
Alcohol[a]							X
Care of special organs							
Ears							X
Eyes							X
Feet					X	X	
Personal hygiene—skin cleanliness, etc.	X	X	X	X		X	
Communicable diseases	X	X	X	X		X	
Community health and environment	X	X	X	X			X
Dental health	X	X	X	X	X	X	
Growth and development						X	
Health examinations	X				X		
Mental health	X	X	X	X	X		
Narcotics[a]							X
Nutrition	X	X	X	X	X	X	
Rest and exercise	X	X	X	X			
Safety[b]							
Bicycle				X			X
Bus			X			X	
Camping			X		X		
Civil disaster						X	
Fire							
Home	X	X		X	X		
Pedestrian							X
School	X	X		X			
To and from school	X	X					
Water			X			X	X

[a] Required by California Law. State Department of Education recommends a fifth or sixth grade placement.

[b] Instruction in public safety and accident prevention required by California law in elementary schools.

SOURCE: Harold J. Cornacchia, "Elementary Health Education Curriculum," *Journal of Health, Physical Education and Recreation,* XXIX, No. 4 (April, 1958), 36.

given each year in terms of the needs and age of the children. But at the junior and senior high school level there is wide variation in practice. If there is an emerging pattern in secondary schools at the moment, it is to arrange one course in the junior years and one in the senior.

If such is the case then the teacher needs to distribute the consideration of problems over the two courses to avoid duplication. There will be some desirable repetition but with only two semesters, there will be many health problem areas ignored altogether. Teachers face this problem locally, making their plans in terms of local needs and possibilities. State courses of study are helpful in suggesting areas to be covered by grades or ages.

One state course of study, for example, in an effort to show how various parts of a major problem area might be distributed over courses in the seventh, ninth, and twelfth grades, makes the following suggestions. The major area is "Keeping Well." The seventh grade section would include the following:

1. Cause and spread of colds and sore throat
2. Spread of bacteria—germs
3. Specific diseases
4. The heart: strength, phenomena of beating, fainting and dizziness
5. Nature and use of first aid for burns, sprains, resuscitation, bites
6. Effects of smoking tobacco
7. Effects of drinking alcohol

The ninth grade would take up these problems:

1. Symptoms and self-diagnosis
2. Use of medicines
3. Use of patent medicines
4. Cause, prevention, and spread of the common cold
5. Tuberculosis and influenza
6. Further discussion of other specific diseases
7. Inoculations and immunity
8. Vaccination for smallpox
9. Death rates from degenerative diseases
10. Blood transfusion
11. Traffic control

The twelfth grade would deal with these problems:

1. Advanced discussion of inoculations, immunity, allergic reactions
2. Anemia, appendicitis, diabetes, nephritis, and other advanced diseases
3. Constipation
4. First aid for heat prostration, shocks, suffocation

The above areas of study for the seventh, ninth,. and twelfth grades do not represent all the material in health which can be taught in the general category of keeping well. The material left out would be recommended for grades eight, ten, and eleven. A six-year graded course of study would cover the entire area. If six years were *not* available then the material would have to be condensed into the years which are being used.

Time Allotment

When should health be taught? There is no standard answer to this question. Many organizations, groups, and experts in school health education have made recommendations in this connection and a cross section or consolidation of these opinions is represented in Table 7.

Any such recommendations must be adapted locally to the particular needs of the students, the curriculum and time schedule in vogue, and the facilities available. It must certainly be recognized that if any school becomes committed to giving direct instruction in health this cannot be done well on starvation rations. Time, space, and equipment must be provided and *no once-a-week arrangement or makeshift rainy-day sharing with the physical education periods will suffice.* If health is to be taught at all it must be taught well, and that means consecutive class periods for a semester or a year uninterrupted by long waits between periods. If hygiene can be offered in the seventh grade, for example, it will not produce best results if offered once a week for the year. Twice a week for a half-year would be better and daily for a semester would be still better. Sharing a twice-a-week physical education schedule is not satisfactory generally nor is any form of once-a-week class meeting. Daily meetings for a shorter length of time will maintain interest at a higher level and be more productive.

If it is fairly well agreed that in the first six grades some time each day should be spent on reading about health, discussing health activities, or doing things pertaining to health, a daily period is desirable. As the grades advance, the health problems become more involved and the students more aware of them and articulate about them. It can be

TABLE 7. Time Allotment for Direct Health Teaching

Grade	Best	Next Best	Least Desirable
1, 2, 3	1 period a day	1 period twice a week	1 period once a week
4, 5, 6	20 minutes 3 times a week	20 minutes once a week	20 minutes once a week
7, 8	1 class period a day for the year	1 class period 3 times a week for a semester	1 class period once a week for a year
9	1 class period a day for a semester	1 class period 3 times a week for a semester	1 class period once a week for a year
10, 11	1 class period a day for a semester	1 class period 3 times a week for a semester	1 class period once a week for a year
12	1 class period a day for a semester	1 class period 3 times a week for a semester	1 class period once a week for a year

SOURCE: Prepared originally by the author and improved by P. C. Bechtel, Ohio Department of Education, Columbus, 1952.

demonstrated that children in every grade from seven through twelve have problems in sufficient quantity and of sufficient importance to make a one-semester course every year worthwhile. Some fear that if so much health is taught in the curriculum the subject will be exhausted in the first three years or at least be spread very thin over the grades. There need be no fear on this score. Various studies have shown rather conclusively that there is enough to be taught for one semester of all six years of the secondary school. A teacher with imagination and resourcefulness could lay out such a program with no fear of wastage of time or repetition. However, few schools are organized so as to permit so much teaching in this area. The next best allotment of time would then be a semester course in each of the seventh, ninth, tenth, and twelfth years, with the tenth year of these four omitted if one of them has to be. This arrangement would involve students entering and leaving both the junior and senior high schools.

The very minimum would be a course for all students at entrance and departure from secondary school with at least three meetings a week if taught for the year or daily class meetings if taught for a semester.

CLASS COMPOSITION

In the elementary grades there is no problem as to whether boys and girls should be taught about health together or in segregated groups. The question does arise in junior high school, though, and persists through the college years. There are many who prefer to have boys taught by themselves and by a man and girls in a separate class and by a woman. Others, however, see no important reason for segregation and believe that health problems germane to the high-school and college years should be discussed in mixed groups for best results.

Actually it is a problem of exaggerated importance. It has been well proved that mixed groups can be taught successfully and without embarrassment and by either a man or a woman. It has likewise been demonstrated that a woman can teach boys and a man girls. The issue of success depends upon the preparation, personality, skill, and approach of the teacher and not upon the subject matter. All but a few of the areas of hygiene are acceptable to both sexes in a mixed group. A teacher might have difficulty sustaining the interest of high-school boys on problems of child care and family feeding, and, likewise, girls might be bored with a discussion of training procedures for competitive athletics. Boys would profit some but not much from intimate instruction concerning menstruation. These areas are, however, in the minority and do not loom large enough in the total scene to justify the position that all hygiene should be taught in segregated groups.

On the college level there is still less reason for segregation. Usually merely administrative convenience keeps the courses apart, at least on the freshman level where the customary one-hour-per-week hygiene course is found. After the first year the elective courses usually found in college bulletins do not require segregated classes. In fact it is the experience of many who have developed the recently appearing "marriage courses" that a mixed group has a definite advantage in that ideas may be tested and contrasting points of view reconciled.

In summary of this point, either mixed or segregated classes are acceptable. The success of the instruction does not depend on the homogeneity of the group. If a class starts out mixed it should not be

separated into boys and girls when the time comes to discuss "sex" or any other controversial area. Such temporary segregation only highlights the subject and distorts its importance and emphasis. Groups which start out mixed should remain so throughout the semester.

TEACHING METHODS

Much has been said about method in education. There are some who ridicule the study of "method," who, believing that the only thing important is the subject matter, feel that a good teacher is one who was born with a knack of "putting his subject matter across"!

Actually the process of producing an educated person—a person able to think for himself, to act in relation to what he knows, and to assimilate knowledge on the problems of the day—is a vastly complicated process. We have discussed its complicated nature in Chapters 3 and 4 and this discussion of teaching method is really a continuation of that discussion.

Because method begins with selection of material and selection of material centers in the nature of the individual and his purposes, the best method of teaching would therefore be to select material to be learned which is intrinsic to the life of the learner. If the material is so selected, is "imperiously demanded" by the learner in order to solve a problem, it will be very difficult indeed for any lecture, motion picture, "buzz group," or any other teaching device to spoil the effect of the material on the personal development of the learner.

All such devices—the lecture, the discussion group, and the audio-visual aid—are to be thought of as tools, ways of getting something accomplished. Just as the physician or surgeon, after the appropriate diagnosis has been made (after the needs have been learned), will then choose a method of therapy most likely to achieve results in terms of patient recovery, the teacher chooses material and method in relation to the job to be done. The teacher therefore must know something of the nature and value and limitations of many methods.

Criteria for Judging Method

A committee of the World Health Organization makes a rough division of methods into two main groups:

1. One-way or didactic methods:

These methods (which include lectures, films, leaflets, posters, radio, television, advertisements, and newspaper articles) assume that the learner is a more or less empty vessel into which information is poured, and that he will then integrate, interpret, reproduce or act upon this information at some later date.

Often very little is known about his existing knowledge, reactions, or interpretation of the information. For such methods to be effective, therefore, every effort must be made to present the facts from many points of view and through as many senses as possible. Even so, the effectiveness will probably be low.

2. Two-way or Socratic methods:

These methods assume that people already possess information, feelings, interests, and beliefs which profoundly influence the learning process, and which must be taken into account before they can be modified or even left alone. Here, two or more people, with different backgrounds of knowledge, work together on the information, integrating it with existing ideas and with possible action.

Such methods of education (which include discussions, committees, councils, interviews, drama, projects, "live" demonstrations, and contrived situations) demand more in time and effort from those participating, but are generally agreed to be more effective in overcoming resistance and in promoting action.[3]

And the same committee suggests the following useful criteria for the selection of methods:

1. Will the methods assure that the information will actually reach each individual?
2. Will the methods attract and hold the interest of people?
3. Will the methods assure that the content and purpose of the new ideas are understood?
4. Will the methods be seen by the people as a means to an important goal?
5. Will the methods assure active participation of the people?

What Methods Are Available?

There are many available methods, but before they are described or evaluated it should be clear that they are *not* all mutually exclusive. That is, a teacher might employ two or more instructional devices like

[3] Expert Committee on Health Education of the Public, *First Report, World Health Organization Technical Report Series, No.* 89, Geneva, World Health Organization, Palais des Nations, October, 1954, pp. 21–22.

a motion picture and discussion the same hour. Or a buzz session, committee report, demonstration, and a test might all be used. Lecturers frequently use audio-visual aids to supplement the spoken word. It must be certain that if a teacher chooses one method he is not excluded from using another. Method is chosen in relation to the job which has to be done.

To use again the two categories of the World Health Organization, we may recognize the following instructional devices:

A. One-Way Didactic	B. Two-Way Socratic
1. Films	1. Discussions
2. Film strips	2. Buzz groups
3. Posters	3. Committee work
4. Radio	4. Panel discussions
5. Television	5. Role-playing
6. Lecture	6. Dramatic presentations
7. Press articles	7. Interviews
8. Recordings	8. Debates
9. Slides	9. Projects
10. Exhibits	10. Demonstrations
11. Graphic materials	11. Field trips
12. Models	12. Guest participants
13. Symposiums	13. Pupil-teacher planning
14. Reading assignments	14. Question-recitation
	15. Sociodrama
	16. Survey
	17. Brainstorming
	18. Conferences
	19. Games
	20. Oral reports
	21. Storytelling
	22. Workshops[4]

THE LECTURE

Many direct courses in health consist of a series of lectures or lecture-discussions. Their effectiveness depends in part upon the subjects which are chosen, in part upon their construction and the way they are presented, and, in part upon the way the students receive them. If the

[4] An excellent description with definitions of the methods may be found in an article by Richard K. Means, *Journal of School Health*, XXVIII, No. 7 (September, 1958), p. 223.

subject chosen is intrinsic to the lives of the listeners, helps them solve some problem of interest to them, broadens their understanding of the scientific world in which they live, and challenges them to think more deeply about some aspect of health as a tool in the process of living, the lecture can be a useful method. If the subject is chosen, however, without reference to a recognized health problem, reflects only the interest of the teacher, then perhaps the comment in *The Education of Henry Adams* on the deadly nature of the lecture system in nineteenth century universities would be appropriate. He said that students can learn from books or discussion more in a day than they could from some lecturers in a month.

If the teacher chooses to lecture on the fluoridation of public water supply, the nutrition of athletes, the sex factors in marriage, or any other topic or subtopic in the whole spectrum of available health material adherence to the following six sequential parts is most important.

A subject: A topic chosen in relation to an on-going interest or sequential development of the material in the course. Not an isolated related-to-nothing topic.

A transition: A word or two showing the relation of this lecture to the one preceding.

An introduction: A brief presentation in which the problem to be discussed is set up in relation to its setting in the world at large or in the lives of students; and a sketch of what the lecture will cover.

The body: All the main points organized in thoughtful and logical sequence with frequent illustrations or references to recognizable circumstances in the lives of students, and not devoid of occasional bits of humor if such is appropriate to making the point.

The summary: Main points are brought together at the close to aid the students in grasping the totality of the lecture.

The transition: A forecast or what will follow in relation to what has been said.

But to many the lecture is *not* the best means of accomplishing the goals in the course. As the psychologist Henry P. Smith says:

> You know from your own experience that one student may get a great deal from listening to the lectures of an able teacher, whereas another may get little or nothing. The reason is that the first student is stimulated to think by what he hears. He goes beyond what is said, recalls examples, forms hypotheses, and sees relationships. But the second, fearful of missing

a single fact, tries to *remember* every word. For the first one, every sentence creates a problem; the other merely tries to hang on from one sentence to the next—the only problem he meets is that of trying to remember everything he hears. The immature student is incapable of creating his own problems as he listens to the teacher's discussion. You must take the time and the trouble to suggest problems to him that will challenge his interest.[5]

Perhaps the best way to use the lecture is in combination with class discussion. The teacher, having set up certain problems or presented certain material in the lecture can seek individual reactions to the material either that hour or the next few days. Certainly opportunity for comment or reaction will give the student a greater sense of participation in the process of problem-solving or information-conveying for which the lecture was designed.

GROUP DISCUSSION

Most teachers prefer to conduct their classes by discussion rather than by lecturing, since they feel that with participation learning is more likely to take place and to affect behavior. The problem in health instruction is the problem of learning in other areas as well: how to get action from a learning situation.

To date, there is no clear evidence that one teaching method is always better than all others. There is reason to believe, however, that individual action is more readily attained if the individual can find endorsement for that action within his group. Apparently, merely to give information in class and to test for knowledge is not enough to assure action. Information received is only part of the story. The teacher must pay some attention to other motivations, and surely group sanction or endorsement and group agreement to act are of great importance in affecting individual behavior.

During World War II a group of research workers (Lewin, Radke, Klisurich, and others) studied changes of attitude as shown in the modification of food habits. This research showed that group discussion, *followed by group decision,* was more effective than either lecture or individual instruction in getting women to adopt certain food practices.

Betty W. Bond, reporting in the *International Journal of Health Education,* makes the following points:

[5] Henry P. Smith, *Psychology of Teaching,* Englewood Cliffs, N.J., Prentice-Hall, 1957, p. 245.

1. When a breast examination given by the physician is adopted as the criterion, the discussion-decision group clearly outranked the lecture group: thirty-four percent of the women in the discussion-decision group had secured such an examination by the time of the first follow-up, fifty-nine percent had done so by thirteen months. In contrast, only twenty-one percent of the lecture group qualified at seven months and thirty-nine percent at thirteen months.

2. When the establishment of the habit of monthly breast self-examination is taken as the criterion, the difference between the two groups is even more notable. At seven months, fifty-one percent of the discussion group reported establishment of the habit as compared to thirty percent of the lecture group doing so. At thirteen months the number who were practicing breast self-examination in the discussion-decision group had increased to fifty-eight percent while, during the same period, it had dropped to only twenty-seven percent in the lecture group. This was probably the most important criterion in that it demanded continuing effort on the part of the women.[6]

Apparently these results favoring the group discussion method of teaching results from the freer, less threatening, less "authoritative" atmosphere of a classroom of peers than the somewhat imposing posture of a lecturer. Attitudes are more readily changed, experiences are shared and thus one feels less alone. Goals are more readily seen, established, and attained.

It takes several years of experience to lead class discussions successfully. Beginning teachers should not expect to handle the discussion method expertly. It is easier to lecture than to conduct a discussion because there are no interruptions, no questions to be answered, no calls to meet issues except on one's own terms. One must realize, however, that the health lecture, like many other lectures, is a less effective instrument in getting the purposes of health instruction accomplished. Because so many teachers prefer to use the class discussion, the following suggestions are offered:

1. *Recognize the different kinds of discussions available for use.* Utterback describes six of them as follows:

1. *The round-table discussion.* Not more than 20 people engage in informal but intelligent and guided talk about a topic of mutual interest

[6] Betty W. Bond, "A Study in Health Education Methods," *International Journal of Health Education*, I, No. 1 (January, 1958), 42.

and concern. The round-table discussion is useful when the main object is to pool information and share ideas or to reach a group decision. It operates best in the absence of any audience, when the participants are all well informed about the subject and about various phases of it, and under the guidance of a skilled leader.

2. *The panel discussion.* In the panel discussion a leader or moderator, and from two to six persons informally talk about a subject in the presence of a listening audience. The panel members prepare themselves in advance. They meet in a planning session to define the problem, prepare a discussion outline, and decide how the panel will proceed in the discussion. The discussion follows the outline previously agreed upon, and one function of the leader is to see that the discussion stays on the track and comes out with stated conclusions.

3. *The forum.* A forum is that part of a public discussion in which members of the audience are invited to ask questions, express disagreements, or add opinions and information. It may follow a lecture, a panel, or other forms of presentation.

4. *The symposium-forum.* In the symposium from two to five experts make speeches which present different phases, or different points of view about a subject. A chairman introduces the speakers, conducts the public forum, and summarizes the results.

The symposium is more formal than the panel or round table. It is essentially a public speaking, rather than a conversational program as is the panel. It is best adapted to large audiences and to problems of a technical nature.

5. *The lecture-forum.* The lecture consists of a single speech given by an expert with special qualifications on the subject. A chairman introduces the speaker and conducts the public forum.

While the lecture has disadvantages, it is perhaps the best method of presenting new and technical material to an audience.

6. *Debate.* A debate is a series of formal addresses delivered for and against a stated proposal. The chairman is a director introducing the subject and speakers and presiding over the forum if one is included in the program.

As a form of discussion the debate has only limited use in accomplishing the purposes of discussion stated earlier. It should be used only when there is a desire to consider the arguments for and against one possible solution for a problem, for example, "Resolved that the National Health Insurance Bill Should be Enacted into Law."

Since the debate considers a given solution, the debater is mainly an advocate or an opponent. He is not a scientist searching for the truth, but

assumes the role of one who believes he already has the truth and is engaged in the task of winning converts.[7]

2. *Choose and define the problem.*[8] Choice should be limited to topics which are included in the subject matter of the course of instruction being pursued. It should be limited to subjects of general class interest and concern, which are suitable for discussion. A topic is not suitable for discussion if it is very technical or involves much detailed knowledge not possessed at least in part by the group. For example, the question, "How is frustration related to aggression in young children?" is a problem for technical research, not for discussion. The discussion method might properly be used to evaluate the results of such a study, however.

In defining the problem it should be stated in question form and in clear unambiguous words. It should be stated in such a way as to call for answers in terms of general principles and not in terms of specific facts. The question, "What was the U.S. birth rate in 1949?" is a question of fact, the answer to which may be found by looking up the published sources. The question, "Should the U.S. adopt policies to increase the national birth rate?" would, however, be a question for discussion.

3. *Divide the problem into its logical subdivisions.* Each subordinate part should be phrased as a question. In the discussion meeting the group will take up each subquestion in order. In other words, the series of subordinate questions will provide a discussion outline.

Let us suppose that a group is to discuss the subject of national health insurance. The question might be stated "Should the Federal Congress pass the national compulsory health insurance bill?" The group might develop the following outline or agenda:

1. What is the National Health Insurance Bill?
 a. What are its objectives?
 b. How does it operate?
 c. Who is compelled to do what under the proposed law?
 d. Who is for it and who is against it?
2. What difficulties in the health field call for a remedy?
 a. Is there a shortage of medical care in some areas?
 b. Are the low-income groups unable to get adequate medical care?

[7] William F. Utterback, mimeographed document from The Ohio State University, Columbus, Ohio, 1957.

[8] Adapted from Utterback, *op. cit.*

3. Would the proposed law remedy the situation?
 a. Would it bring the shortages up to par?
 b. Would it make medical care available to those who do not get it now?
 c. Would it improve the quality of medical care?
4. Would it create as well as solve problems?
 a. Would it introduce politics into medicine?
 b. Would it cost too much?

4. *Search for valid evidence on each question and subordinate question.* The search for evidence will be, like the preceding two steps, a cooperative process. In case of the panel discussion each member of the panel will agree to direct his efforts toward the discovery of evidence on one or more subtopics and will be especially prepared in those subjects, though he will take part in the discussion of all parts of the agenda.

In the search for relevant evidence emphasis should be given to the question, "What are the facts?" Facts are stated in the form of verbal or statistical descriptions of situations relatively independent of interpretation or personal judgment. They may be facts of personal observation or facts observed and reported by others. Statements of alleged facts must be subjected to critical evaluation, however, before being accepted as valid evidence.

In addition to evidence of fact the discussant may seek evidence of opinion, that is, statements which reflect personal judgments or beliefs. Evidence of opinion may come from three different sources: the discussants own personal opinion, the opinion of other lay persons, and the opinion of experts in the field in question. Personal, lay, and expert opinion must be weighed and carefully appraised before it is accepted as valid evidence: "Is my opinion based on a clear understanding of the problem? Is it supported by facts? Has it held up against the criticism of others? Is the quoted authority in a position to know the facts? Is he qualified to testify? Is he prejudiced? Is his testimony supported by other evidence?"

5. *Examine suggested conclusions and choose the best of them.*

ADDITIONAL SUGGESTIONS

In addition to the foregoing major suggestions for the conduct of group discussions, the following may be helpful to the teacher:

1. In the original planning of the problem or unit the teacher should make sure that there is enough preliminary discussion to bring out the

issues or directions which the later investigations and discussions might take. As many students as wish to should express themselves while the teacher is taking note, on the board or elsewhere, of these principal subproblems. When the subject has been amply explored in this preliminary way, the teacher should boil the issues down to the point where they can be handled well and then present them clearly to the class for selection and development. Insofar as is reasonable, students should be given their choice in the pursuit of investigations, but the teacher must always prevent misbalance by assigning some good students to bolster the cause of poorer ones.

2. In class debates or presentations by students the teacher should keep the presentations reasonably on the track, try to get all students to participate, and draw out the shy and diffident ones with friendly encouragement. The brighter, more aggressive students should not be allowed to monopolize the conversation.

3. The language of the classroom should be largely nontechnical. The teacher should remember that he is not preparing medical students, and only the mastery of technical words for "unit" use is needed. When a point cannot be made safely or well without the technical word it should be used, but explained and spelled until all understand it.

4. Instruction in the classroom is certainly not the only source of health information. Students learn from dozens of other sources. The teacher is in competition with the movies, press, commercials, parents, friends, books, and other teachers. He should make it his business, then, to be accurate, fair, and scientific, and to realize that the least he can do is to present the facts—the individual himself will make the choice of behavior.

5. The teacher should be prepared to answer many questions but should not be afraid to admit it when he does not know the answer. In such instances he should have a pretty good idea where the answer can be found.

6. The teacher should always begin each hour with a transitional word or two, tying today with yesterday, and use frequent summaries of the discussion thus far, always summarizing and tying together each unit or major subpart of each unit.

7. The teacher should frequently use timely illustrations, particularly when discussing abstract or general problems.

8. The discussion should not begin with the issue upon which prejudice is strongest but on a problem which will "warm up" the class.

9. The teacher should avoid answering a question with a question, nor should the entire period be taken up with questions from the students and answers from the teacher. The latter should turn many of the questions back on the class for reply, gaining information on the problem that way and then putting the capstone on the matter himself before going on to the next question.

10. Following the development of an appropriate summary for the problem the teacher should then draw out of the class suggestions for action—things to do or not to do, directions to take. These will not always be clear cut; they may be developed in the form of alternatives. At all events, the group should be given a chance to express itself in terms of recommended action or point of view.

FIELD EXPERIENCES

Field trips are also becoming increasingly popular in health education. It is realized that to learn about healthful living *only* from books is a somewhat limited experience. To find out how people actually live, the way they meet or fail to meet their problems, the way the community safeguards the health of its citizens, or to gain an on-the-ground insight into the larger social problems related to health provides a richer, more meaningful approach to an understanding of personal and public health. There are, of course, many trips available to students in a school which approves of such extramural activity. An enterprising teacher might arrange for the class to:

1. Visit hospitals, clinics, or public health agencies, to observe and study their programs.
2. Observe and study the work of commercial laboratories for the production of serums, drugs, and medicines.
3. Survey the recreational program of the community in relation to needs.
4. Study slum areas in relation to disease, housing needs, and the connection between crowded conditions and crime.
5. Study, through personal experience, the work of quacks, charlatans, religious healers, and others who purport to heal the sick.
6. Observe the work of government in the inspection and control of food and water supply, restaurant and hotel sanitation.
7. Study building and zoning ordinances for their relation to safety, health, and welfare.

8. Survey local traffic control problems in relation to improvement.
9. Seek out local fire hazards with suggestions for improvement.
10. Sample public opinion on a variety of contemporary problems such as medical care, superstitions and fallacious beliefs, dietary practices, attitudes toward insanity, causes of disease.

These are but ten of a long list of possibilities. The field trip can become an important adjunct to any course of study in health education or it can be a waste of time. To assure the former and prevent the latter the following conditions should be observed:

1. The trip or study should have a definite bearing on the matters at hand. It should be a part of what is being studied at the moment, and should not intrude upon a sequence of thought being developed at the time.
2. The trip should be thoroughly talked over before it occurs, with purposes and prospective outcomes thoroughly understood by the committee or class making the trip.
3. On the trip discussion of what is going on, or being seen, should be directed to the purposes for which the trip is made.
4. When the group has returned to the classroom the trip should be summarized, the gains itemized, the lessons drawn so all will understand.
5. The trip should not be taken merely as an amusement, or to satisfy morbid curiosities, or as a chance to get out of school for a half-day. A trip to a penitentiary or to a court must be related to a health problem under discussion and cannot be justified if made merely to satisfy curious people as to how criminals are treated or what "The Big House" looks like. Likewise, trips to waterworks or dairy barns are futile unless they bear upon problems of food sanitation.
6. All safety precautions for the care of students making the trip should be taken. These should be planned in advance. Transportation, chaperons, directions, even police escorts should be arranged to prevent any remote possibility of accident or other untoward event.
7. Arrangements with the hosts for the trip should be made far enough in advance to allow them to prepare to receive the students and to make their visit worthwhile.
8. Above all, the field experience should be geared to the maturity level or level of comprehension of the class. Some students will visit

the community water supply in the fourth grade and then find to their dismay that this experience is repeated at the college level. The field experience should be thoroughly discussed beforehand to ascertain not only its usefulness in the advancement of learning but its suitability and interest for the age for which it is planned.

9. All such matters as parental consent, costs, time for the trip, appropriate clothing, meals, and rules for conduct should be discussed and agreed to before the trip is undertaken.

THE USE OF COMMUNITY AGENCIES

As in the development of worthwhile field trips, there is every reason to associate the school course of study in health education with community agencies working in the health field. Too long has there been a lack of understanding on the part of each—the school and the agency—as to purposes and programs. Students gain in understanding of health problems when reciprocal relationships are established and the health agency is invited to participate in the program of school health education.

Means of perfecting this relationship are numerous. As Miss Tucker has well expressed it, "There are three effective ways for making the school health program more community centered. One is to bring the community resource people into the school-room. Another is to take the students into the community where they will actually participate in health projects. A third is for the school activity to take part in joint planning for health through a community health council."[9] Illustrations from actual situations of this three-way relationship may be cited as follows:

1. In one city the public health engineers and the fire inspectors made their annual report after visits to the schools and consultation with not only school officials but students as well. The report became a joint report.

2. A local dental society offered to assist the school in the construction of an adequate dental education and care program. Students participated in the planning.

3. School-community health councils (with student representation, of course) may be formed for discussion and action on common prob-

[9] Edythe Tucker, "The Community and the School Health Program," *Journal of School Health*, April, 1947, p. 103.

lems (see page 454 for further discussion of council responsibilities) where such health organizations do not exist. Representative teachers and students participate on the health council of a community.

4. Summer preschool roundups of parent-teacher associations are sometimes held.

5. The state highway patrol and the traffic bureau of the local police department have worked with school children to the successful furtherance of the ends of the department and the protection of the children.

6. Parent-teacher groups, women's clubs, service clubs, and other interested groups have frequently sponsored, financed, and conducted the local school-lunch program.

7. State and local departments of health, as well as numerous volunteer agencies like the tuberculosis associations and Red Cross chapters loan films and slides of interest, provide literature and speakers of value to school health classes.

8. With students participating, a disease control program for the schools was planned by the school-community council, approved by the board, and executed by the school personnel.

9. Students in health classes have frequently attended meetings of metropolitan health councils and made the activities of the councils a study for the benefit of all, including the health council.

10. Students in classes have also attended public forums, meetings of medical, labor, educational, or other groups where current issues of medical care are being discussed.

11. The school and local branch of any voluntary health agency can be of great mutual aid. The students can assist in fund-raising, participate in programs, extend information; the association can furnish services, literature, and other informational services on the subject, and in part interpret the program to the community through the school.

12. Students asked for and got a field trip with the commissioner of public health to visit swimming pools and bathing beaches for joint discussion and action concerning the sanitation and safety of the facilities.

13. Students have, on numerous occasions, assisted local dairy councils with their programs of public education.

14. There are many other instances of reciprocal services—all to the ultimate benefit of the health of people: police protection at meetings and games, fire department inspections and instruction in fire safety,

Boy Scout cleanup days. These and the activities of dozens of other local, state, and national organizations all provide opportunity for enriching the health education program in the school if effective correlation can be established.

THE USE OF TEXTBOOKS

There are many school systems which prefer to adopt single textbooks for each grade in each subject. To meet this purpose there are several good textbooks or series of books written for health teaching purposes. All the books are not, however, of equal value. Some are very old-fashioned in their approach and organization, some are scientifically inaccurate in spots, and some are excellent indeed. In order to help the teacher judge the quality of a textbook proposed for use the following criteria are suggested:

1. The contents of the book should be based upon the health needs and problems of the age group for which it is written and should be directed toward the same objectives as the course.
2. The major emphasis of the text should be upon problems crucial to the pupils and important to the community in which the book is being used.
3. The content material must be scientifically accurate throughout and in thorough accord with the best available knowledge in the biological sciences.
4. The first chapter of the book should provide a good springboard for the year's program in health instruction by appealing to the pupils' goals, such as interest in appearance, athletics, vocational success, and by pointing out the relationship which exists between the achievement of these goals and the satisfactory solution of the health problems contained in the remaining chapters of the book.
5. The book should be written in an interesting and readable style with the vocabulary on the comprehension level of the pupils who will use it.
6. The text should contain a glossary of difficult words.
7. The text should contain suitable and purposeful activities, participation in which will help the pupils solve their problems related to growth, development, and adjustment.
8. At the end of each chapter, there should be listed suitable references of books, pamphlets, films, filmstrips, and other audio-visual aids.

9. The charts, graphs, and tables contained in the book should be meaningful to the pupils.
10. All statistics should be accurate and up to date.
11. The illustrations should be attractive, accurate, and relevant.
12. The paper and print should be of a quality and size which will minimize eyestrain and the cover should be attractive.
13. The authors should have sufficient training and experience to qualify them to write a satisfactory text.

OTHER RESOURCES

As long as the teacher relies only upon the sound of his own voice, as in the lecture, to communicate ideas to a class of eager youngsters, he is limited indeed. He is denying the students splendid opportunities to deepen their comprehension of the health material which is under discussion. Actually there are but few teachers who are so limited in their resourcefulness that they confine their technique to the use of their own one-way communication system.

Teaching aids have increased in popularity greatly since the invention of the chalkboard upon which the teacher could draw pictures to illustrate his point. Now, in addition to the resources already discussed in this section, the teacher has radio and television, good libraries full of reference books, and persons from the community willing to come in to class to present or discuss problems. The class can employ such visual devices as scrapbooks, felt boards, flannel boards, still pictures, posters, charts, models, specimens, and a number of other things helpful in enriching understanding.

If there is a health museum nearby, classes profit greatly from spending many hours in directed study of the exhibits therein which may be helpful on the project at hand in the classroom.

Of all of these resources perhaps the educational film is the most useful. There are many excellent ones developed in all phases of health education. The teacher has but to consult the catalogues issued by commerical companies, state departments of public instruction, or his own board of education for the listing of available films (see Chapter 8).

Often a 15-minute film can cover more effectively an experience that would require an hour or more if a field visitation were made. In the film, if a large group is viewing it, all children have a common de-

nominator of experience, all are seeing the same thing, all can hear the explanations that take place, certain things can be magnified in size in order that every part is clear. This is not to say that a motion picture always does the job better than an actual field trip, because in some instances learning is more effective by seeing the "real thing." The film, however, can bring to the classroom many experiences which are not possible for every school to draw upon.

Television may or may not have the potentialities of the motion picture. The latter is, of course, mobile. It can be used when, how, and as often as the teacher chooses. It can become a part of the unit under discussion and not the master of it. Television, on the other hand, must be broadcast. In a live broadcast, many other persons are involved and the class must have the set on and viewing whether they want to or not and whether or not the telecast is relevant to their current study.

There is no question as to the excellence of some television productions. It is helpful in surgery, in recording experiments, in the sciences, in conducting classes when the viewers have little else to do than follow silently the television teacher. But for everyday use in health education situations, it has its limitations principally because of the necessary inflexibility inherent in its use.

The Choice of Methods

How can a teacher decide whether or not to use the resources that have been mentioned? The teacher's principal problem is to use the unlimited resources at hand effectively. *There is no point to using a motion picture, or a set of slides, or a field trip unless it bears on the problem at hand and makes a real contribution to its understanding.* The merit of any resource depends on its relevance and its quality.

Certainly no teacher needs to be limited to a single textbook and his own lectures and discussions. The subject can be made immeasurably more vital and functional in the lives of students if other resources are used. Chapter 8 contains bibliographies, addresses, and other suggestions for the location of resources. Teachers should use these freely.

Text and reference books still remain the principal resource, other than the teacher's own knowledge and skill, but in adopting a text extreme care should be taken to assess its worth as a teaching instrument. If one does not use a single text, then a set of six or a dozen or an unlimited number of good reference books in the library will be needed.

As a matter of fact, even with a text reference, books and magazines are needed because no school text ever written has covered or will be able to cover the entire range of student problems and interests. Students must have access to additional readings as the occasion demands, and for that reason the teacher should make the effort to provide such references at the rate of one to every eight or ten students.

In summary, these aids to teaching, whether they be books, movies, charts or whatever, are not to be judged good or bad in terms of their own value but only to the extent that they contribute to learning on the problem at hand. They ought not to be used merely for the sake of using them—but liberally used if they make a substantial contribution to students' comprehension of the material to be learned.

SPECIAL CONSIDERATIONS

Misinformation and Unscientific Material

There is a danger that misinformation and unscientific material will creep into courses of study. Personal hygiene is not, in every respect, an exact science ready to be applied to human life with predictable results. Much of hygiene is conjecture, assumption, or reasoning based on related scientific evidence. Some hygiene is based only on personal experience. Someone finds that morning calisthenics make him feel fit to eat a hearty breakfast so he forthwith teaches or, worse, writes that such exercises are good for everyone. Someone reasons that, because water is an essential for life and we rid ourselves of so many pints each day, to drink eight or ten glasses a day is one of nature's requirements for everyone. In one school syllabus they speak of "surplus nervous energy." There is no such thing. In another, flat-chestedness is alleged to be predisposing to tuberculosis. There is no such relationship. It is widely thought that breathing exercises are important to bring "fresh air" to one's lungs or to "build up resistance to disease." No such relationship can be established scientifically.

Health teachers are constantly tempted to give the final and definitive word on the causes of colds, the hours of sleep required, the best treatment for constipation, or the ways to prevent mental aberrations. So many people know so many wrong answers to life's problems that the conscientious teacher has a difficult time resisting the temptation to

speak with authority. One who is widely read and who keeps up with scientific developments learns to distinguish a folk tale from fact, fraud from an honest report, and quackery from science. Nothing but constant study and wide reading will develop this talent for discrimination. Such preparation is a requisite for health teaching.

Furthermore, the teacher must recognize fully that he is in no position to diagnose or recommend treatment for mental or physical ills. Students will frequently ask: "What can I do for this cold?" or "If I feel thus and so do you suppose it could be cancer?" The teacher should *not* attempt any solution to such problems either for an individual or before a group. A quite general discussion summarizing what is known about the treatment of colds will be adequate in the first instance, and no more than a description of principal symptoms of cancer would be appropriate classroom material in the second.

The Omission of Large and Important Problems

Sometimes courses omit certain problems or areas which are important to students. There may be a section on the nervous system, for example, with no treatment of adjustment to school or to friends, emotional control, or the prevention of worry. Frequently sections or chapters on sex hygiene are conducted with no mention of continence, premarriage problems, or instinct versus intelligence in "falling in love." Not infrequently courses are developed omitting a discussion of nostrums, quackery, medical care, or healing systems.

These omissions are unfortunate. They occur for a variety of reasons. Sometimes the instructor is unprepared in one area so it is deliberately left out. Sometimes time is limited and other areas of less importance are chosen because they are easier. Sometimes the instructor fears controversy and avoids it. On other occasions he simply does not know the problem exists. Whatever the reason, good course-of-study construction does not allow these omissions. No course of study can be complete without a careful covering of all the major health problems confronting the people.

Rewards and Prizes

Teachers are frequently moved to use rewards or prizes or other motivating forces in health education. Membership buttons in a health club, ribbons for performance, group prizes for the room making the

"best showing," medals, cups, insignia, even cash prizes are sometimes used to stimulate good health practice or the acquisition of knowledge. The world seems constituted to accept such as legitimate teaching devices.

There are many rewards which may be associated with an activity either as an incentive or as recognition of good work well done. Furthermore, some are tangible or have tangible value while some are intangible. A student may become vaccinated, for example, because everyone else is and his room wants to win the blue star for 100 percent vaccination; or perhaps a certificate is given each child who performs fine health practices daily for a month. Or possibly five dollars is awarded the student who writes the best essay on "Why I Should Drink Milk." Possibly only self-satisfaction is the reward for abstaining from tobacco and alcohol until one is "of age." Grades, money, public commendation, trips, cups, self-satisfaction, approval of the group, publicity, group membership, "being captain"—these are all available for use as the teacher strives for health knowledge and health behavior on the part of students.

Are they all of equal value? Are they all equally justifiable in terms of their educational soundness? Obviously they are not. Selection of rewards will depend upon the interpretation and use of criteria. If a teacher cares not for the effect of the reward itself upon the child but only for the results gained, he will use one kind of reward. If he believes the reward should be only a recognition of good work, he will use the same reward but in an entirely different manner. It is the difference between "If you will go to bed every night for a week before nine o'clock, I'll give you a dollar," and "Because you've been good and not stayed up late this week, here's a dollar." Grades in health classes are particularly susceptible to this difference. "If you'll pass this knowledge test you'll get an A," or "Because you did well on that test you have earned an A." Rewards used in some ways may produce dishonest reactions, distorted egos, antagonisms, and completely distorted values. Used in other ways they may be productive of continued good work and clear understandings of where values are.

What criteria, then, may be applied *before* a reward is fixed upon or *before* a system of rewards is set up? These are suggested:

1. The reward should be inherent in the activity—not separate or unrelated to it.

2. The reward should lead the winner to further activity in the same line of endeavor.
3. The reward should have values no different from those of the activity itself.
4. The reward should produce no socially unacceptable consequences in the individual winner.
5. Above all, the reward or anticipation thereof should not serve as an incentive; the incentive must come from the satisfactions within the activity.

In short, when rewards in health education are used to help the student face the realities of life, achieve something, organize and integrate values, *then* they are moral instruments. When they warp values, teach false values, distort ego, and dissipate energy, then they must be thought of as immoral.

The Area of Sex Hygiene or Social Living

The study and discussion of sex hygiene offer great possibilities for affecting favorably the behavior and attitudes of young people. The evidence is overwhelming that instruction is needed to guide children through adolescence and into maturity and marriage. Great good can be done if courses of study can include consideration of these problems and if teachers in charge of health instruction are well prepared to meet the issues.

Many school principals and teachers are reluctant to deal with the subject because they fear an adverse public reaction. Many others have such a distorted notion of what sex education is that they think of it narrowly as only education about venereal disease or about how to beget children. Others with equally distorted views and vulgar predilections conceive of it only as teaching youngsters things they should not know about the anatomy of the genitalia and the mechanics of intercourse. To such benighted views any well-informed person takes well-founded exception. Instruction in social relationships including even the phases directly related to sex life can be handled cleanly, scientifically, objectively, and broadly by skilled and informed teachers. There need be nothing obscene about the discussion of boy-girl relationships. There is nothing vulgar or harmful about the many well-taught courses on marriage problems which are found in universities today.

Hoyman makes the point in this connection that:

There is no defensible way for the school to avoid facing the moral, ethical and religious issues involved in providing sex education for modern youth. When properly planned by the school, sex education is concerned with both facts and values. For even limited success will depend upon the school having a deep concern not only with topics such as venereal disease, reproduction and the sex organs, but also with ideals, inspiration and conduct.

This makes the task of the school more difficult. It is comparatively easy to teach modern youth the "facts of life." But it is another matter to shape their attitudes about sex; change their habits of sexual expression; guide their conduct in boy-girl relationships; and to help prepare them for love, marriage, parenthood and family life.[10]

Three well-known approaches to classroom instruction exist in this area: (1) through animal and plant life (the "birds, bees, and butterflies" approach); (2) through the anatomy and physiology involved; and (3) through human life situations. Of the three, the last is by far the most productively helpful to young people as they wend their way through the complexities of premarital and marital life. Admittedly it is helpful to have students come to the unit with some understanding of terminology and processes gleaned from the animals—from ponies and pollen. Nevertheless, to learn of human sex life by an original study of animals and plants is to pitch the early understanding of sex matters at a low level from which some individuals are never able to rise. Actually, there is little similarity (only in gross anatomy and basic function) between the sex life of animals and that of man. The presence of the intellect, of the ability to plan, think, react emotionally, worry, and be sensitive, and the existence of the complexity of marriage customs, conventions, laws, and similar impediments cast man's sex life in an entirely different setting from that of sheep. To help people we must plunge directly into a consideration of people's problems. "The proper study of mankind is man."

The approach through anatomy and physiology is equally unfortunate. Youngsters are curious about anatomy, but even as beneficiaries of graphic portrayals of the detail of the reproductive apparatus, the students may miss entirely the great social and emotional controls needed in intelligent sex behavior. Such anatomical information is only inci-

[10] Howard S. Hoyman, "Basic Issues in School Sex Education," *Journal of School Health*, XXIII, No. 1 (January, 1953), p. 14.

dental to the solution of problems. As one high school girl put it: "I have learned the parts of the reproductive system, but how does this help me in handling my emotions on a Saturday night date?"

The best approach is through human life situations as they arise and as they become important and meaningful to students at any age. How a 7-year-old boy should act when going to a girl playmate's birthday party is a human life situation and thus part of sex education. Whether to "go steady" in high school, how to conduct oneself at a dance, what legal requirements should be met before marriage, and how much money a fellow should have before he marries—these and many other similar human problems give the best approach to classroom discussions. They should be utilized to the fullest—*and they may be discovered from the students themselves.*

Here, for example, is one listing of 45 different but related questions which came from students, and which may serve as a basis for student-teacher discussions in senior high school. Units of work constructed from these and other human problems represent the best kind of sex hygiene instruction:

FAMILY HEALTH

The problems of high school students in social and family living.

Current problems

1. What behaviors, manners, courtesies, and customs are desirable among boys and girls in order to establish harmonious social relationships within the school? (a) Conduct on dates (b) Conduct around the school (c) Language and "horseplay" (d) Dress (e) Drinking
2. What is the basis for attraction and friendship between boys and girls? (a) The nature of "sex appeal" (b) Similarities in interests (c) The need for attention (d) The relative importance of social status (e) Loyalties
3. How can one go about meeting the boy or girl one would like to meet? (a) Introductions (b) "Pickups" (c) Organizations
4. Is it desirable to establish a "steady date" in high school? (a) Variety in friendships
5. What responsibilities do a boy and girl have to each other and to the parents of their companions? (a) Arriving home from dates (b) Differences in family standards (c) Safety on dates
6. What knowledge of the reproductive structures and functions is necessary to the establishment of an intellectual understanding of one's own

life and life in relation to others? (a) The essentials of structure and function

7. How can a boy or girl control the reproductive urge? (a) The use of the intelligence in relation to emotion (b) Interests (c) Moral standards (d) Recognition of consequences
8. How should girls care for themselves during menstruation? (a) Rest (b) Bathing (c) Exercise (d) Medical care
9. What is menstruation and what are its normal characteristics? (a) Purpose (b) Regularity
10. Are intimate complete relationships before marriage justifiable? (a) Moral standards (b) Probable consequences (c) Effect on later marriage (d) The futility of "the conquest"
11. What are the best sources of information on matters of love and marriage which are available to high school students? (a) People (b) Books (c) Movies (d) Miscellaneous literature
12. What are the best ways to gain this information?

Premarriage problems

13. What consideration should be taken into account in the selection of a marriage partner? (a) Maturity (b) Health (c) Background (d) Interests (e) Age (f) Looks (g) Education (h) Job
14. How can one tell when one is ready to assume the responsibilities of marriage? (a) Age (b) Income (c) Maturity (d) Willingness
15. What should each partner know about the health and background of the other before agreeing to marry? (a) Health (b) Heredity (c) Disease
16. How much money should a couple have before they marry? (a) Tastes (b) Locality (c) Standard of living (d) Child planning
17. Should opposites marry?
18. Should engaged couples be allowed greater intimacies than others? (a) Local customs (b) Effect on marriage (c) Effects of restraint
19. How long should engagements last?
20. What attitudes should be cultivated regarding the influences of "in-laws" on the forthcoming marriage? (a) Parental decisions and advice (b) Gifts and support (c) Living with parents (d) Visits and vacations
21. What legal requirements must be met before marriage? (a) Health certificate (b) License (c) Banns (d) The minister

Family planning

22. How can sexual compatibility be established in marriage? (a) Individual difference in response and desires (b) Attitudes (c) Trial and error

23. How soon should couples plan for and have their first child? (a) Financial arrangements (b) Religious beliefs (c) Health (d) Readiness for children
24. How soon should a physician be consulted?
25. What sort of examination should be made of the prospective mother before pregnancy?
26. What should be known by the couple about how life begins? (a) Function of reproductive organs (b) Genetic mechanisms
27. Under what conditions would further childbearing be detrimental to a mother's health? (a) Medical judgment (b) Emotional state
28. What changes in diet as well as in rest and other personal habits should be made during pregnancy? (a) Medical judgment (b) Rest (c) Exercise (d) Diet (e) Household work
29. What are the early signs of pregnancy? (a) Tests for pregnancy
30. What sort of care should a mother have following the birth of the child? (a) Medical advice (b) Sympathetic family
31. How long after the birth of a child is a physician's care needed?
32. What sort of adjustment is required of the husband during pregnancy? (a) Patience (b) Sharing of duties (c) Restraint (d) Development of affection
33. What should be known about hospital costs, insurance plans, and necessary home equipment in anticipation of a child?
34. What assistance do the federal and state governments give to wives and families of servicemen? (a) The funds for maternal health (b) Sources of information
35. What plan should be made by the family regarding recreational interests, friends, and distribution of time within the home? (a) Planning as a group (b) Selfish interests (c) Income and expenditures
36. How can differences of opinion within the home be reconciled? (a) Frankness (b) Willingness to settle differences (c) Authority (d) Customs and traditions

The care of children

37. How much attention should a child have from the parents? (a) The rights of infants (b) Fondling (c) Spoiling the child (d) Decision-making
38. To what extent should the presence of a child affect the relationship between the husband and wife? (a) Continuation of joint interests (b) Sharing affection (c) Building the family
39. What medical care (e.g., diet, immunization, control of infections, habit regulation, correction of defects) should be provided for the child?

40. How can one tell if the baby is developing normally? (a) Weight (b) Motor controls (c) Length (d) Vision (e) Hearing
41. How many toys and other playthings should be provided for the child? (a) Overstimulation (b) Purposes (c) Values
42. Should the parents plan in advance for the emotional responses and psychological growth of the child? (a) Response to people (b) Crying (c) Development of character traits (d) Imitation
43. How should the child be prepared for school? (a) Attitudes (b) Skills (c) Clothing (d) Immunizations (e) Sociability (f) Personal habits
44. What attitudes should be developed in the child in preparation for the visits to the physician and dentist?
45. At what age should parents plan for the social development of the child in his relationship with playmates and adults?[11]

From those 45 human problems and the many others which are similar a teacher with the class or a committee can construct several small units of work.

As an example of a unit on social living as a part of a year's work in health education at the high school level, the following is offered. This unit fits into a one-semester course required in the senior year. The class meets five days a week for eighteen weeks and boys and girls are taught separately although joint meetings are sometimes held. Six weeks of the eighteen are devoted to this unit on social living.

The entire unit deals with six problems: dating, adolescence, how to choose a mate, getting ready for marriage, heredity, and building a family. The teachers proceed to the first problem—dating—something as follows:

Example of specific questions discussed—dating

1. What is expected of a date?
 a. Behavior
 b. Manners
 c. Courtesies
 d. Customs
2. What changes occur when dating begins?
 a. Stimulation for personal grooming
 b. Desire for release from parental direction
 c. Social status

[11] These problems were chosen as typical and important problems as presented in a collection of some 700 in the same area—all gathered from high school and college students.

d. Group loyalties

3. How can an individual meet a potential date?
 a. Introductions
 b. "Pickups"
 c. Organizations
 d. "Blind dates"
4. When should the individual start dating?
 a. For parties
 b. For double dates
 c. For single dates
5. What can be done on a date?
6. Is it necessary to drink or smoke to be popular?
7. What hours should high school students observe?
8. Should girls ask boys for dates?
9. Can girls have a week when they assume the dating responsibilities of boys?
10. Is Dutch-treating permissible or desirable?
11. What makes a boy or girl popular?
12. Is a girl expected to invite her escort in after a date?
13. How can one refuse a date and encourage the boy to call again?
14. Is there such a thing as dating too much or too little?
15. Are necking and petting necessary for popularity?
16. What are the advantages and disadvantages of having a variety of friendships?
17. What are the advantages and disadvantages of going steady?
18. Is kissing expected on a first date?
19. Should one use dates as a means of meeting people (even if he does not like the date)?
20. Should the boy ask the girl's parents what time she is expected home?

Projects:

a. Organize a panel to discuss questions of primary concern.
b. Make a questionnaire and submit to various groups.
 (1) Check the average answer of the boys as compared with the average answer of the girls.
 (2) Check the average answer of the senior as compared with that of a junior.
 (3) Check the average answer of the student as compared with that of the parent.
c. Write a skit or play in which the various questions are answered with situations.
d. List personality traits that make for popularity.

General activities:

a. Panel discussions based on needs of students
b. Joint class meetings considered necessary by students to develop better relationships and further understanding
c. Speakers for combined groups—topics
 (1) Senior Prom—the male viewpoint; the female viewpoint
 (2) Further discussions in separate classrooms
d. Movies; filmstrips (example)
 (1) "Junior Prom"
 (2) "Manners Made Easy"
e. Student-planned assembly programs for entire student body
f. Student speakers from other countries discuss their methods of handling similar problems

Additional methods of achieving curriculum objectives:

a. Cooperation with the home and community-home; visitation program adopted as a school policy establishes an understanding of home life, background, and social training.
b. Cooperation with the senior class in regard to social functions
c. Cooperation with school organizations in correlation of problems
 (1) Intramurals—mixed volleyball teams; badminton; dancing; ping pong
 (2) Game room—leisure-time activities
 (3) Council of student representatives—school policies; assembly programs
d. Group participation in class planning
e. Supervised study enabling instructor to give individual attention
f. Required reading lists providing additional information for specific sections of the unit
g. Reference library in classroom—emphasis on the value of student research
h. Use of a manikin purchased by the Health and Science departments for classroom discussion[12]

Any one of these units is susceptible to interesting treatment involving student participation. The teacher should *not* do all the talking. A sex lecture is generally ineffective. The student should be expected to participate by raising questions, discussing, contributing information, working on committees, and making investigations. To study the matter

[12] Prepared by Shirley Blaine and Foster Elliott of Garfield Heights High School, Garfield Heights, Ohio, in cooperation with the Departments of Social Studies and Guidance, 1951.

of child adoption by sending a committee to visit an adoption agency or nursery and report their findings to the class would be effective. Likewise, a visit to a maternity ward, an investigation at the district attorney's office of abortion rackets, an exhibit in the classroom of a complete layette borrowed from a department store, and a class-developed code of behavior are examples of opportunities for students to participate. The emphasis on *doing* as well as mere talking can take much of the tension off discussions in this area and both teachers and students can feel more comfortable.

How broad is the field of sex instruction? Are there subareas which, for the good of the total situation, the teacher had best *not* handle? The field is tremendously broad and great discretion and good taste must always be used by the teacher in admitting to or barring from the syllabus or discussion certain areas of doubtful propriety or actual taboo. No one has ever suggested that the schoolroom was the place to "cover the water front," as it were. There are some areas best left untouched, some which might be appropriately admitted depending on the local situation, and others which could be admitted with safety almost anywhere. A rough screening of the material available for teaching would, on the foregoing basis, appear something as follows:

I. Areas of possibility—acceptable for school discussion virtually everywhere
 A. Primary years
 1. Functions of elimination as they relate to the genitalia including protection and care
 2. Phenomenon of birth; the coming of the baby, reproduction in plants and animals
 3. Early social friendships—manners and courtesies between sexes
 4. Early conceptions of sex differences
 B. Intermediate years
 1. Mental and physiological changes attendant upon growth—continuation of sex differences
 2. Continuation of social and ethical relationships between the sexes—social friendships
 3. Early lessons in hereditary influence
 4. Basic sources of information on sex problems
 C. Puberty and adolescence
 1. Secondary sex characteristics and phenomena

2. Full discussion of friendly relationships between the sexes; social and ethical problems; social standards; origins of social relationships
3. Discussion of preliminary emotional experiences
4. Continuance of information on the phenomena of reproduction –further discussion where necessary of genitalia and reproductive process
5. Mate choosing–the nature of affection and love
6. Continence–ethical, biological, and psychological factors
7. Venereal disease–prevention and care
8. Factors important in the establishment of a home
9. Scientific sources of information

D. Adulthood
1. Case for and against birth control–social, ethical, and biological
2. Parental responsibilities
3. Home and family life problems–homemaking
4. Care and development of children

II. Areas of caution–may be unsuitable for school discussion because of lack of satisfactory scientific information or because of local objections
1. Basis for sex and emotional control in human life
2. Relation of intelligence to love
3. Biological foundation of morals
4. Process of birth–conception, delivery, normal and abnormal phenomena
5. Sterilization
6. Testicular and ovarian hormones
7. Rejuvenation
8. Artificial impregnation
9. Sexual practices during pregnancy
10. Sex perversions

III. Areas of taboo–no place in the classroom
1. Abnormal sexology–sexual aberrations
2. *Modus operandi* of sexual intercourse
3. Techniques of birth control

Obviously teachers of health education must be well prepared to handle safely and efficiently the material in this area. Certainly the answers to many student problems will not be found in the details of anatomy and physiology of the reproductive systems. Much more is needed. Teachers expecting to be helpful to students throughout these units on social living should have a fairly well-rounded background in

the organic, psychological, and social factors which influence behavior in these situations. *Adequate preparation is essential.* It would be recommended that much of this material be left untouched unless the teacher is prepared tc do a competent job on it. It is difficult to delineate what knowledge is necessary; impossible, in fact, to place here specific suggestions. The teacher should read the outstanding basic books on the subject and, after reading them, should proceed with a continuous plan of improving his understanding of the area.

Knowledge of the social problems of the adolescent, their nature, cause, and solutions, is basic. The knowledge of the anatomy and physiology of the reproductive system is but preliminary in preparation to the true dealing with the problems. The students deserve highly competent handling of this entire field.

Teachers experienced in dealing with the subject frequently come to these conclusions about it:

1. "Instruction concerning sex should be a normal part of courses designed to have a much broader educational purpose. Life science, biology, or hygiene form excellent mediums."[13]

2. "The unit on sex hygiene should not be placed prominently near the beginning of the course, nor should it be last. Teachers and students should have ample time to become acquainted."[14]

3. No prominence at all should be given the approaching unit—no special announcements, no segregation or division of the class *just for this unit,* no special visitors, nothing which is out of the usual routine of the course. The unit should be "taken in stride."

4. "While a clear-cut and thorough factual knowledge is a necessary preliminary to ethical interpretations, the social implications of sex should be presented with sincerity and conviction."[15]

5. The teacher should retain throughout the unit a nice sense of humor—not letting the discussions get too "heavy" and being alert to turn potentially embarrassing moments into moments of laughter. The discussion must be kept on an objective, understandable, and human plane, being allowed neither to become grim, tense, and heavy nor to degenerate into a "smut" session.

[13] Adapted from Williard W. Beatty, Superintendent of Schools, Bronxville, N.Y., as published in *Education,* March, 1934, p. 396

[14] *Ibid.,* p. 397.

[15] *Ibid.,* p. 397.

6. The teacher should feel no hesitation about using the slang of the day in discussing a point at issue. Vulgarisms and obscenities are, of course, barred but the harmless slang expressions for dates, love-making, or marriage are acceptable and help to ease a situation which otherwise might be tense.

7. "Fear is not nearly as effective a deterrent as positive idealism; therefore, loyalties, family ideals, self-respect, self-restraint, and moderation should be taught rather than the danger or horrors of venereal disease."[16]

8. "Children tend to absorb only that information which serves immediate needs or answers immediate questions. Some provision for continuously meeting of the child's sex problems is manifestly ideal. If this is not feasible, as many problems as possible should be met *prior to* adolescense. . . . When, too, instruction is delayed until adolescent development is under way . . . the teacher's job becomes more difficult."[17]

9. Teachers should be very wary indeed of talking from their own personal experience. Because of the wide range of individual variations and difference in sex reactions there can be no safe "typical" experience. People vary tremendously in sex behaviors and, hence, personal experience is highly unreliable.

10. "While single lectures in high school by some outsider may be preferable to ignoring the subject completely, they are typically objectionable because they allow little opportunity for discussion and clarification, are frequently 'taken the wrong way' or made fun of, and are often saccharine and general."[18]

11. "Parents in schools where units on sex, reproduction, heredity, marriage, or social relationships are taught should be informed in advance of the course, given easy opportunity to learn of its content, and told something of the methods and procedures to be used. Suggestions for improvement of the course should be solicited from parents and other interested adults."[19]

12. Special instructors for this aspect of a health or biology course should not replace the regular teacher unless those specialists, as in an integrated project, are contributing specialized knowledge along with others.

13. "The instructor should at all times be strictly honest in all state-

[16] *Ibid.*, p. 397.
[17] *Ibid.*, p. 398.
[18] *Ibid.*, p. 398.
[19] *Ibid.*, p. 398.

ments, ready to encourage and to answer frankly all questions and careful to distinguish fact from belief or interpretation." Likewise, the instructor should readily admit that he does not know the answer if such is the case and proceed then to help the students and himself find it. There is certainly no disgrace in not knowing the answers to human problems. A teacher concerned about "losing face" by admitting he does not know should safeguard his pride by telling the class at the outset that the answers to many of their questions remain in the realm of the unknown and that they can only hunt for clues together.[20]

14. Teachers should not be chosen for this kind of instruction only on the basis of their scientific preparation. Because the discussions are so close to students, so intimate and affective of a student's life, the soundness of character of the teacher is of even greater importance.

15. Segregation by sexes is not a requisite for effective instruction. Few items of importance must be omitted to save embarrassment in mixed classes. Certainly if the class starts out mixed it should stay that way through the unit on sex hygiene. Likewise, there is no reason to believe a skilled man could not teach successfully a group of girls or a woman a class of boys. It depends entirely upon the skill, preparation, and seriousness of purpose which the teacher brings to the group.

16. When should the work be given? There is no "ripe" time in particular for the unit on sex hygiene. Every year, every day is the strategic time for instruction. There are needs for this kind of instruction from infancy to senility. No one unit given in some magical semester will clear away all previous questions and solve all problems which will arise in the future. Need for instruction, or at least advice and counsel, is continuous. Units of work in any school year from first grade through college will be fruitful. Certainly any year of the senior high school would reap a full harvest of questions and problems

The Area of Mental Health, or Life Adjustment

The study of the various aspects of mental health, of adjustment to the many problems, stresses, and strains of modern life, is increasingly popular and prominent in health education. Treatment of problems in this vast area has become a necessity.

Formerly a health teacher needed to pay little attention to problems of psychological health; the organic aspects of health were considered adequate coverage. At present, however, the situation is radically differ-

[20] *Ibid.*, p. 398.

ent. Partly because of a growing understanding of the interaction between "mind" and "body"—psychosomatic relationships—and partly because of a growing student demand for consideration of psychological problems, the area is now a major one in any health course. And the problems are not only those relating to the *prevention* of psychological disorder, but involve the discussion of ways to live fully the creative well-adjusted life.

However, the area requires no special treatment—thorough preparation on the part of the teacher, yes—but no special permissions or precautions are necessary. The same techniques of problem discovery, grade placement, and student participation apply here as elsewhere. Students are in need of discussion of their problems, not their anatomy. The description of the brain and spnial cord, gray and white matter, the nature of instincts and reflexes, the location in the brain of the centers for sight, hearing, and memory—all such detail is no doubt very interesting to some but to many it is dull unless it explains something.

In this area there are student problems to be solved and student questions to be answered. Instructional classroom services are not all that are needed to deal with the psychological and behavior problems in school. Guidance programs, psychological counseling, and an analysis and reform of the psychological aspects of the teaching-learning process are needed effectively to influence student adjustment and behavior. Classroom instruction is only a facet of the needed program.

Such instruction, by constructing units of work as in other areas of health, can bring helpful classroom discussion on questions like the following:

1. What are the characteristics of a normal mind—and a normal adjustment to one's environment?
2. Does one have to learn to adjust or does it come naturally?
3. What does intelligence or mental processes have to do with health?
4. Does good health include the way a person thinks?
5. What does heredity have to do with making a normal mind?
6. Is self-analysis a good thing?
7. Is it harder to get along with people now than it used to be?
8. Can one's mental health be built up like physical health?
9. Does a person's physical health affect him psychologically?
10. How can one prevent nervousness?
11. What is temperament? What are moods?
12. Is there such a thing as nervous or emotional energy?

13. Can worry be prevented? Fear? Insanity? Epilepsy? Alcoholism?
14. Is there any intelligent basis for superstition?
15. Is it human nature to worry and fret?

And here are examples of the kinds of problems which are susceptible to some form of class treatment:

1. Homesickness
2. Fear of competitive games
3. Wanting to play and be alone
4. Dislike for the opposite sex
5. Stealing, cheating, and lying
6. Temper flare-ups
7. Poor sportsmanship
8. Cruelty to others and to animals
9. Inability to accept criticism
10. Insistence on own way
11. Inability to make decisions
12. Dependence upon others for praise and attention
13. Daydreaming and absent-mindedness
14. Fears
15. Feelings of inferiority and inhibition

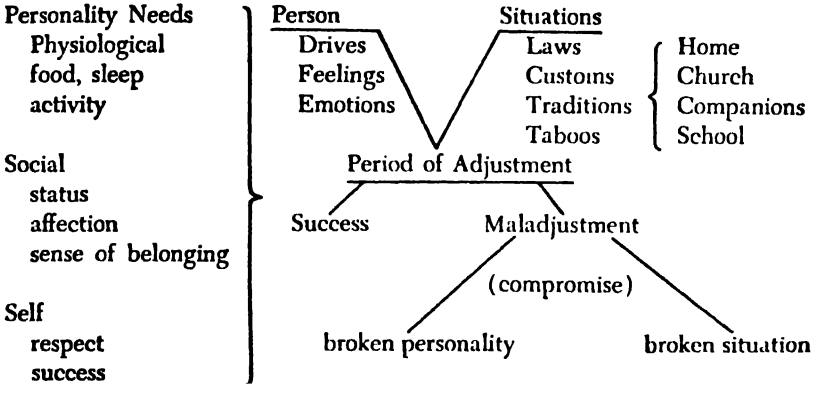
As an example of an attempt made by one group to deal with problems in this area, the following unit has been worked out:

UNIT I. ADJUSTING TO COLLEGE LIFE AND MENTAL HEALTH

1. What are some common problems that men encounter at the university?
2. What counseling agencies are available to young men to help them with certain of these problems?
 a. Adjustment problems in general and vocational guidance
 b. Financial problems needing scholarship assistance, loans, or employment
 c. Problems related to inability to study properly or effectively
 d. Problems related to difficulty in mathematics or reading
 e. Problems of speech or hearing
 f. Problems of marital or premarital character
 g. Problems related to health
 h. Learning how to dance
 i. Legal aids
3. What is personality? Mental health? How does personality take shape? Good mental health comes then when you (the personality) satisfy your

drives, feelings and emotions and still meet in a satisfactory manner the demands of your social and physical environment.

The Way We learn
a. Introjection
b. Identification
c. Sublimation



4. What mental mechanisms do we sometimes use to resolve our conflicts? Are these harmful?

COMPETITION BETWEEN PERSONALITY AND ENVIRONMENT

Escape Reaction	*Flight Reaction*	*Constructive Compromise*
Dodge responsibilities	Refuse to cooperate	Make decision that will bring the most enjoyment and satisfaction in the long run—a test of growing up
Become sick: malingerer; "gold bricker"	Bitterness	
Make-believe "attitude" is unhealthy way to escape environment	Troublemaker	
	Griper	

5. What are some of the personality traits that make for successful adjustment on the job and in society?

appearance	expression
agreeableness	intelligence
manners	self-confidence
interests	dependability
temperament	loyalty

6. What practices can one follow which aid him to develop a pleasing personality, mental health, and efficiency?
 a. Scientific attitude
 1. Analyze yourself
 2. Analyze the demands your environment places on you; also your goals in relation to your abilities. What changes should be made?
 3. Face reality
 4. Seek competent help when necessary
 b. Normal social relations
 1. Getting along with others, making friends
 2. Get into a social group and extra-curricular activities
 3. Recreational life; hobbies, physical activity, etc.
 c. React, but react favorably
 Control means the utilization of nervous energy in developing a new and healthful activity that may take the place of an unwholesome activity.
 d. Mental work, itself
 1. Learn to do your own work; mental efficiency follows the same law of function as does physical, that is, become a good runner only by running, become efficient in speaking only by speaking, writing by writing. The man that copies another man's theme learns only to be a good copier. The man that leans on someone else only learns to become dependent on others.
 2. Budget your time; balance of work, play, and rest.

Required reading for students:

1. Johns, Sutton and Webster, *Health for Effective Living,* New York, McGraw-Hill, 1957, chap. 1, "Health for Effective Living; A Point of View"; chap. 3, "Appraising Mental Health"; chap 4, "Making Life Adjustments."

References for students:

1. Dunbar, H. Flanders, *Emotion and Bodily Changes,* Fourth Edition, New York, Columbia University Press, 1954.
2. Gutwirth, Samuel W., *How to Free Yourself from Nervous Tension,* Chicago, Regnery, 1955.
3. Polatin, Phillip, and Philtine, Ellen, *The Well-Adjusted Personality,* Philadelphia, Lippincott, 1952.
4. Scheinfeld, A., "Heredity and Mental Illness," *Today's Health,* May. 1956, p. 22.
5. Selye, Hans, *The Stress of Life,* New York, McGraw-Hill, 1956.
6. Stevenson, George S., *How to Deal with Your Tensions,* New York, National Association for Mental Health, 1957.

7. Strecker, E. A., and Appell, K. E., *Discovering Ourselves,* Second Edition, New York, Macmillan, 1951.[21]

The foregoing, however, are illustrations of a concentration of study in the area of mental health within a health education course itself. This sort of instruction represents actually but a small part of the opportunity present in school to form values, attitudes, behaviors, and understandings in this area.

Stratemeyer, for example, has some abundant suggestions for material which is central to or borders on this area of mental health.

Freedom of Minorities to Participate Fully and Without Prejudice in all Aspects of Life and Government

How can the school establish a climate of acceptance of those who differ from the majority in point of view, color, religion, or occupation?

How can the school situation be organized so that minority groups may feel free to discuss their problems, find solutions to these problems, and feel they themselves are important in the total situation?

How can the school develop in the thinking of a member of a minority understanding that he, too, must respect the rights of others and their points of view?

How can children and youth be provided a vital and respected place in society in keeping with their maturity?

What is involved in assuring to every child and youth the maximum realization of his intellectual power and special abilities?

What is involved in helping children and youth appreciate the uniqueness of others?

Freedom to Express Points of View that Conflict with Those of the Majority

What attitudes, skills, and understandings are basic to listening thoughtfully to developing ideas, to knowing when it is important to fight for an idea and when a difference of opinion is not crucial, to disagreeing with a point of view without personal antagonism?

How shall learners be encouraged to explore new ideas? To voice conflicting ideas or unpopular beliefs?

How can children and youth be helped to think clearly while exploring ideas so that they will have a sound basis for action?[22]

[21] Prepared by the Department of Physical Education, Division for Men, of Ohio State University, under the direction of Dr. W. P. Cushman, 1958.

[22] Florence B. Stratemeyer, *Developing a Curriculum for Modern Living,* Second Edition, New York, Bureau of Publications, Teachers College, Columbia University, 1957, pp. 30–32.

A Kansas group has been doing some remarkable work in preparing classroom experience as these suggestions will show:

The materials that have been fully developed may be indicated as follows: (a) *in the seventh grade* in the course in community civics, community problems are analyzed in terms of the dynamics of human behavior, (b) *in the eighth grade* the student examines his own experiences at school, at home, in his play with others, in his leisure and in maintining his general health, and plans his course of action based on an analysis of causes. There is also a discussion of family relationships in the home economics course, (c) *in the ninth and tenth grades* where world history and the history of major social institutions are taught, not only the major events are learned but each civilization or institution is examined to ascertain how far it meets the major human needs, (d) *in the eleventh grade* where American History and Problems are taught, there are units on the conservation of human resources including the nature, extent and causes of mental illness; the care of the sick; and the nature of a program of prevention—with stress on mental hygiene, (e) *in the twelfth grade* where modern social problems are taught, there is a series of units on courtship, preparation for marriage and parenthood using what had been previously learned about causes of human behavior.[23]

The same group have prepared lesson plans for the elementary years with the following titles:

Examples of . . . lesson plans are: the second, "How Personality Traits Develop"; the third, "Our Inner Human Drives"; the fifth, "How Emotions Affect Us Physically"; the sixth, "How Emotions Are Aroused"; the seventh, "Emotions Displayed at Halloween"; the eighth, "Our Unpleasant Emotions"; the ninth, "Emotional Conflict"; the tenth, "Our Pleasant Emotions"; the eleventh, "Emotional Problems at Home."

Controversial Areas

There are several areas of potential controversy in health education. One can get into an argument over almost anything from the unimportant problem of drinking a certain amount of water each day to whether some of the "doubtful" areas of sex hygiene should be taught. Principally, however, the elements of objection are to be found in the

[23] "Promotion of Mental Health in the Primary and Secondary Schools—An Evaluation of Four Projects," formulated by the Committee on Preventive Psychiatry of the Group for the Advancement of Psychiatry, 3617 W. 6th Avenue, Topeka, Kansas, Report No. 18 (January, 1951), p. 10.

areas of (1) sex education, (2) healing, (3) administration of medical care, (4) alcohol and tobacco, and (5) current and local problems like the fluoridation of public water supplies. Teachers have to face these with conviction based upon evidence and experience.

The sources of controversy vary. Sometimes citizens in the community object to a discussion of certain topics, such as Christian Science. Sometimes the school principal does not want the teacher to deal with premarital problems. Sometimes the medical society may object to the teacher's lack of professional training, or to the expression of certain views concerning socialized medicine. It is simply impossible, in the course of a year's teaching, to avoid controversial areas. One should, therefore, have a technique for meeting objections embodying, perhaps, some of the following:

1. Teachers should keep rather full notes of what they and students say or do in these areas of controversy. This is for "the sake of the record." It is always helpful, when someone demands to know "What is it you are teaching these young people?" to be able to show them.

2. Teachers should keep as full a record as possible of the student problems or questions asked about the areas. It is frequently helpful to show that the teacher did not "put such things in the heads of students" but that these ideas were already there and were discussed in class to get at the truth, rather than allowing attitudes to be formed and behavior affected by street-corner conversations.

3. When critics bring the issue to the principal (they will rarely bring it to the teacher himself), the teacher, if called to discuss the matter, should meet the issue fairly, courageously, aggressively, and with the best interests of the students in mind. There is no cause to be intimidated by critics of any sort. Teachers should be prepared, when the provocation arises, to take the case to any "judge," present the need and its answer, and be content to rest the case with the authorities for settlement.

4. Sometimes, in face of rumors of objection or of stated criticism, teachers find it helpful to go directly to the critics, lay the cards on the table, and seek a discussion. Frequently such personal conferences will result in a "settlement out of court" which is to the advantage of students.

5. Teachers should remember that, even though they are public servants, they are *professional* and need not fear every local politician,

or run away and hide when the local dowager and arbiter of society begins to wag her tongue. With surprising frequency the community applauds the teacher who stands up for his rights and defends the opportunity of children to learn.

6. Any such attitude of aggressive defense must be solidly based on a scientific position. For example, if a teacher has been dealing with religious healing in terms other than what is known about psychosomatic medicine, he has a much weaker defense. If, in dealing with boy-girl relationships, the teacher has allowed vulgarisms to creep in, or has made the discussion too personal, or has simply taught the unit unprepared to do so, then he is vulnerable. One can meet controversy successfully if one is sure of his position. Nothing contributes more to such confidence than a thorough and constant preparation in the science of hygiene *and* in the science of education.

7. Much potential objection to dealing with sex hygiene, venereal disease, insanity, and other extraordinary areas can be avoided if one tries *not* to be spectacular or shocking, uses simple terms, avoids the abnormal and the morbid, and keeps a sense of humor throughout.

SUMMARY

To teach about health in a specific course with a room and period and with a syllabus or text is popularly the ideal way to attain the objectives of health instruction. To many it seems the best and most fruitful way to convey to youth the great lessons of science as they may be applied to the preservation and development of human life. Teachers will do well constantly to bear in mind that the students in health classes are not medical students. They are not even interested in science because it is science. They are interested in life in general, in their lives as they are being lived, and they will accept only a small amount of unrelated scientific data and will reject that which is not pertinent to their on-going interests and problems.

The easiest way, by far, to teach health directly, in a course set up for the purpose, is to divide the material by the great systems of the body, teach the anatomy and physiology of the systems, and then allow for a few questions of practical application if time remains. This is at once the easiest and the most sterile. Little happens to the learner beyond the temporary acquisition of some knowledge. What is des-

perately needed is action, behavior. People need to *live* more healthfully, and cramming their heads full of knowledge will not guarantee favorable modifications in their living. The material to be taught must be chosen in relation to the living needs. The teacher must cultivate an insight into students. A college student one day expressed this point eloquently to one of the better teachers of health when he said, "I have gotten so much out of this course because I have had the feeling all along *that you were talking to me.*" When teachers can create that atmosphere, have their students feel the value of the material as well as learn the material itself, then the direct teaching of health is justifying its existence.

But no tricks of rearrangement of anatomy or physiology or other basic sciences will do. Whether one begins with the fascinating activities of the cell and works outward, "dresses up" the anatomical detail "to make it interesting," or uses all the personality of a television performer, the course will still be largely wasted until and unless it deals intimately, helpfully, and understandingly with the problems of its students. The material must be chosen in relation to its intrinsic value, taught as living material, and students must be allowed some share in the whole process. The smug complacency of scientifically trained teachers who assume that they *know* what students should learn and then proceed to teach without seeking and getting an identification of the student with the material is deplorable indeed. There are health problems to be solved, living to be made happier and more effective, and lives to be saved. No teacher can afford to miss the opportunity to affect favorably the lives of students by dealing exclusively with material intrinsic to those lives.

SELECTED READINGS

In addition to the several readings listed as footnotes in this chapter the following will be helpful. Additional, more extensive, resources will be found in Chapter 8.

Adams, Fay, *Educating America's Children—Elementary School Curriculum Methods,* New York, Ronald Press, 1954, 628 pp.

Avery, Curtis E., and Kirkendall, Lester A., *The Oregon Developmental Center Project in Family Life Education,* Portland, Ore., E. C. Brown Trust, 1955.

Daly, Ruth L., "Teen-Agers Seek the Facts," *Ideas,* XXII, No. 1 (1955–56), 6. A publication of the Nassau County Tuberculosis and Public Health Association, Roslyn, N.Y.

Ernest, Zola A., and Jones, Arlynne Lake, "A Comparative Study of Two Methods of Teaching Personal Hygiene to Certain Grambling College Students," *Journal of School Health,* June, 1955, pp. 162–164.

General Health Courses Committee, Annual College Conference, "How Reliable Is Health Information?" *Journal of Health, Physical Education and Recreation,* April, 1956, p. 11. Sponsored by the Health and Physical Education Service, Virginia Department of Education.

Gross, Richard E., and McDonald, Frederick J., "Classroom Methods: The Problem-Solving Approach," *Phi Delta Kappan,* XXXIX (March, 1958), 259–265.

Grout, Ruth E., *Health Teaching in Schools,* Third Edition, Philadelphia, Saunders, 1958.

Hoyman, H. S., "Basic Issues in School Sex Education, *Journal of School Health,* XXIII, No. 1 (January, 1953), 14.

Hoyman, H. S., "High School Health Textbooks–How Readable?" *The Physical Educator,* XII, No. 3 (October, 1955).

Irwin, Leslie W., Humphrey, James H., Johnson, Warren R., *Methods and Materials in School Health Education,* St. Louis, Mosby, 1956.

Lerrigo, Marion O., and Southard, Helen, *Sex Education Series:* (3) *Finding Yourself;* (4) *Learning About Love;* (5) *Facts Aren't Enough,* Prepared for the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, 1955.

National Education Association and American Medical Association, *Health Education,* Washington, D.C., Report of the Joint Committee on Health Problems in Education, 1960.

Sasman, Erwin H., "Classroom Methods: Do Laboratory and Field Experiences Change Behavior?" *Phi Delta Kappan,* XXXIX (March, 1958), 267.

Saylor, J. Galen, and Alexander, William M., *Curriculum Planning for Better Teaching and Learning,* New York, Rinehart, 1954.

Schneider, Robert E., *Methods and Materials of Health Education,* Philadelphia, Saunders, 1958.

Shaftel, George, and Fannie, R., *Role Playing the Problem Story, An Approach to Human Relations in the Classroom,* New York, The National Conference of Christians and Jews, 1956.

Smith, B. Othanel, Stanley, William O., and Shores, J. Harlan, *Fundamentals of Curriculum Development,* Revised Edition, Yonkers-on-Hudson, N.Y., World, 1957.

State Department of Public Instruction, *A Guide for Health Education,* Bulletin No. 219, Indianapolis, Ind., 1956, pp. 183–184.

Stovall, Thomas F., "Classroom Methods: Lecture vs. Discussion," *Pki Delta Kappan,* XXXIX (March, 1958), 255–258.

Superintendent of Documents, *How Children Use the Community for Learning,* Washington 25, D.C., Government Printing Office, 1953.

— 6 —

Correlation

Traditionally, the school curriculum has been composed of a number of more or less related "subjects," each with "a certain logic and organization of its own."[1] Thus, we have the elementary skills of reading, writing, and arithmetic, and the later subjects of history, science, mathematics, physical education, music, art, and others. Subjects have multiplied to the point where it is now difficult indeed to find time and space for them to be taught in the course of a day or week.

But, it is through a systematic study of these "courses," or "subjects," that one pursues the means of education: "Emphasis is thus placed on the subject as the organizing basis of the experience of the learner. Establishment of relationships between subjects is encouraged, but elimination of subject lines is held to destroy the foundation of education. Ability to meet common problems of living is the central purpose of the subject curriculum, but the achievement of this purpose is held to be best realized through systematic study of the various subjects."[2]

In the college and university structure where the subject or course is the central feature of the curriculum, one sometimes gains the impression that without a particular course, say, one of the sciences, the whole of a college education would be valueless. Such is the price paid for experience in one of these traditional and monolithic structures.

[1] Hollis L. Caswell and Arthur W. Foshay, *Education In The Elementary School,* Third Edition, New York, American Book, 1957, p. 258.
[2] *Ibid.*

But, actually, there is inevitably some overlap between subjects. It is difficult not to learn some English while studying biology. Biology teaches one a great deal about health. In health education it is possible to learn something of politics through a discussion of the issues of fluoridation of public water supplies. This interrelationship of subjects, or courses, is called *correlation.* Sometimes it is planned, most often not.

Teaching health by correlating material with other areas of the traditional curriculum was once a very popular way of covering the field. The program of correlation had strong advocates. They conceived of health instruction as a study of life, and as the curriculum in elementary or secondary schools covered all the aspects of life, it should be easy to teach in science, physical education, history, and all the other areas the health material that was needed. Conversely, if there existed a special health course in the curriculum an appropriate correlative relationship could be established whereby history or science could be taught with the health material. This program aims at the breakdown of the rigid barriers which separate the subjects and areas and seeks a corelationship between health material and all the others. Technically, correlation means the relation of parts to parts—a co- or shared relationship between them. Applied to health education it means the relationship, within the curriculum, of health to the biological sciences, to music, to the social sciences, that is, health material is included in teaching these subjects.

POTENTIAL RELATIONSHIPS TO HEALTH EDUCATION

Correlation has some rich possibilities. There is such a close relationship, for example, between the biological sciences and the hygiene of living that correlation is inevitable and will occur whether planned or not. In fact, in many modern textbooks in biology the material has been chosen purposely to deal with human biology and with human health. The correlation here is inescapable. Likewise the social sciences and physical education are rich in correlative possibilities for the teaching of health. Home economics and the physical sciences offer excellent opportunities also. It is in these areas that correlation comes easiest and is the most readily demonstrated. Other areas such as art and music have potentialities but not as many or as rich.

There is, or should be, a reciprocal relationship between health education and other areas. If health education is the study of life, who is to say where one picks up the many bits of information one has about it, or how one forms the attitudes one has about health and sickness? Perhaps a study of political science develops attitudes toward authority which later show up in acceptance or rejection of a personal discipline in relation to some chain of command. After all, there were some 2 million or more persons who were discharged from the armed services during World War II because of emotional or psychological incompatibility with military life. What were the origins of such incompatibility? *Some* aspect of education other than health education might have been responsible.

If education in general purports to prepare young people to assume charge of their lives, to equip them to live a good life, then examination of the content and relationship of these subjects and courses must constantly be undertaken from the standpoint of their relation to the health aspects of life.

An example from a text on "Civics" will serve to emphasize the existing situation. The problem of crime is discussed in terms of the organization of a police force, its functions as prescribed by law, methods for detecting and apprehending criminals, the organization of courts and their functions, training schools and prisons and their function of detention, and perhaps some discussion of the relation of poverty to crime. Nowhere is there any discussion of the motivations underlying criminal behavior or of the police or courts trying to understand the motivations and considering these in dealing with the criminal. There is no discussion of the usefulness of understanding the motivations and their application in the rehabilitation of the criminal. Nor is there discussion of the problem of prevention of crime by attempting to remove the causes of criminal behavior. Neither is there any discussion of why some persons living in the same neighborhood or even in the same home become criminals while others do not.[3]

It would be virtually impossible to teach industrial arts without doing a rather thorough job on safety precautions, first aid for shop accidents, protection against toxic materials, and the body mechanics of lifting

[3] Formulated by the Committee on Preventive Psychiatry of the Group for the Advancement of Psychiatry, "Promotion of Mental Health in the Primary and Secondary Schools: An Evaluation of Four Projects," *Report No. 18* (January, 1951), p. 9.

heavy objects. And social studies is rich with possibilities for dealing with such health problems as health insurance plans, social medicine, public clinics for the indigent, Congressional "health" bills, bio-statistics and population problems, and the conquest of disease as an economic problem.

Some of the outstanding topics or problems from health education which might reasonably be dealt with in other areas are:

With physical education:

1. Cleanliness, infection, bathing, skin infections
2. First aid and care of injuries, protection against injury
3. Clothing and weather
4. Use of the physical examination, limitations and possibilities for activity, development of compensating activities
5. Experience in participation in developmental and individually prescribed activities
6. Experience in planning, decision-making, social conduct, and emotional control through competitive situations
7. Experience in choosing activities for current and later use and in evaluating results of participation
8. Relation between vigorous and restful activities
9. Fatigue, conditioning, "training," diet, and nutrition in relation to activity
10. Safety precautions in all activities
11. Experience in the development of a sense of achievement, in personal evaluation, and in self-direction
12. Individual differences in size, strength, endocrine factors, and ability in relation to performance
13. Sex differences in performance, organic and psychological development
14. Experience in the appreciation of play, fun, and recreation
15. Experience in acceptable boy-girl relationship through co-recreation

With biological sciences:

1. Development of the cell, influences for retardation, normal growth and development, cell needs
2. Plant and animal sex development and reproduction, pollination, fertilization
3. Plants, molds, bacteria in relation to infection, disease-producing organisms
4. Heredity, its operation in living things including man; facts and fallacies; evolution

5. Biological anti-agents, communicable diseases and control
6. Basic functions of digestion, assimilation, elimination, sensory activity, respiration, and irritability
7. Adaptations of organisms to environment
8. Mammalian structure and function
9. Water, milk, and food protection and purification
10. Scientific methods versus superstition in treatment of diseases

With physical sciences:

1. Night ventilation and heating
2. Vision, refraction, optics
3. Disinfectants, germicides
4. Chemistry of food, nutritional needs
5. Weather, climate, and health and disease
6. Water and food preservation and sanitation, food freezing
7. The use of the X-ray in medicine, radioactive substances in disease control
8. Health problems in space, space travel
9. Velocity in relation to safety in driving
10. Relationship of physics and chemistry to physiology
11. The control of sex in the embryo through physical means
12. The atom, fissionable material, and health
13. Fluoridation and chlorination of water

With social sciences:

1. Comparative health states on international basis
2. Governmental health organizations here and abroad
3. Functions of government relating to health of people
4. Current issues of medical and health care
5. Studies of environment, home and community planning, city planning
6. School and community recreation
7. The family, domestic and comparative
8. Traffic control, automobile hazards, industrial safety, legal backgrounds
9. Poverty, sickness, economic status, race, depressions, and disease
10. Health in relation to rural and urban populations
11. Growth of superstitions, fallacies, rumors, prejudices
12. International relationships as they relate to health
13. The World Health Organization and kindred groups
14. The influence of health factors, e.g., the great plagues, on history
15. Health problems in specific world areas
16. Health problems and economic and industrial development

Problems of democracy:

1. Study of official and voluntary agencies and their function in public health, the public health service, local health department
2. Functions of health officers, health commissioners, coroners, inspectors, sanitation directors
3. Knowledge of available community health services
4. Consideration of health activities of clubs, labor organizations, and various other societies
5. Legal requirements for driving, use of firearms, installation of certain machines and apparatus
6. Analysis of the recreational facilities available in the community
7. Health status of the community and the nation
8. Study and discussion of current health legislation, fluoridation, socialized medicine
9. Discussion of family health problems, the advisability of voluntary health insurance, cost of medical care
10. Health problems of the nation's elder citizens
11. Relation of slum areas to physical and mental health
12. Sociological aspects of disability and disease
13. Effect of city zoning in promotion of community health
14. Problems of community sanitation and efforts to control communicable disease, inspection, adequate waste and sewage disposal
15. Importance of food preservation in interstate and international commerce
16. Health regulations and inspections relative to international travel[4]

Driver education:

1. Importance of mind and muscle coordination
2. Effect of alcohol and narcotics on driving ability
3. Study of eyesight and the necessity of adequate vision
4. Safety rules for drivers, pedestrians, and bicycle riders
5. Need for road courtesy and patience
6. Need for stable emotions and logical thinking
7. Study of accident facts and statistics
8. Organization of safety patrols and safety councils
9. Relation of sleep and proper eating to personal energy and stamina
10. Emergency procedures to follow in case of an accident, first aid[5]

[4] This section as well as parts of others were taken, with permission, from Elena M. Sliepcevich and Charles R. Carroll, "The Correlation of Health with Other Areas of the High School Curriculum," *Journal of School Health,* XXVIII, No. 9 (November, 1958), 283.

[5] *Ibid.*, p. 288.

With homemaking:

1. Nutrition, food preparation, distribution, and production
2. Home management, recreation, personal problems
3. Child care and development, home care of the sick
4. Marriage problems
5. Clothing
6. Housing adequacy, ventilation, heating, planning
7. Relation between diet and fitness
8. Public and domestic problems in food preparation in relation to disease
9. Safety in the home
10. Home decor and mental health[6]

Illustrations of Possibilities

Without attempting to reproduce complete study or resource units from other areas, the following are some excerpts or sections from outlines prepared by others to show how health material may be used in correlation:

a. From a resource unit in the physical sciences entitled "Exploring the Air Above Us":

1. The effects of space flight on the body (this might include one or more of the following):
 - Effects of hypoxia on crew and passengers
 - Weightlessness
 - Pressure breathing
 - Effects of cosmic rays on body tissue
 - Effects of acceleration—as in rocket propulsion of a body into space
 - Discomforts and physiological damage caused by the intense noise generated by jet engines and aircraft
 - Danger of sudden decompression of the pressurized cabin
 - Psychological hazards of space flight—can man stand the pace, the prolonged confinement, the insecurity and loneliness, the monotony, the total emotional and mental stress of space flight?
 - Effect on vision—the G-load in the crystalline lens of the eye may cause supporting tissues to sag and the lens to move out of focus

[6] Adapted from a mimeographed document prepared by Eugene Beck for the faculty of the Department of University Schools, The Ohio State University, Columbus, Ohio, 1942.

2. The health implications of day-night cycles in both global and space travel

 As we approach flight at the speed of day (1038 m.p.h. at the equator) we can leave Paris at local lunchtime and arrive in New York at local lunchtime. But the body says it is evening and time for dinner. Unless adjustments are made in eating and sleeping habits, physiological needs are thrown out of kilter. Over a prolonged period, says Dr. Strughold, Head of the Space Medicine Department at Randolph Field, Texas, this can lead to a nervous collapse. For this reason, the "space doctors" at Randolph are devising "days" from 18 to 24 hours long for future space-ship crews —with specific periods for work, sleep, and recreation. Such a schedule will be necessary because there are no references for day and night in space.[7]

b. From a unit plan for a study of "Planning for Health Protection" in Business Education; suggested student learning experiences:

1. Investigate the costs for hospitalization in local hospitals.
2. Investigate local costs for disease protection.
3. Make tentative plans for complete insurance coverage for family of four.
4. Investigate national toll of accidents in terms of man-power lost, cost in money, and in police effort of prevention.
5. Study various forms of school insurance plans.
6. Plan a family budget for one year including all major items.
7. Investigate and evaluate distribution of tax dollar for community health services.

c. From history, some of the correlative health material may be shown in the following brief outline:

HISTORY PROBLEMS	HEALTH CORRELATIONS
1. The Old World background	Greek medicine: Hippocrates, often called the father of modern medicine, advocated the gymnasium system of educating the young to develop a sound mind and body. Roman Empire: Practiced administration of health affairs. Police officers super-

[7] The Metropolitan Life Insurance Company, *Health Bulletin for Teachers*, XXVI, No. 5 (April, 1956), School Health Bureau, New York.

vised paving and draining of streets, inspection of weights and measures, maintaining of order, and provision of good-quality grain. Romans were provided with clean drinking water, and hundreds of public baths in the cities were supplied through 34 stone aqueducts.

Medieval medicine: Cleanliness of spirit was stressed more than bodily cleanliness. Sanitation conditions and disease-control methods were sadly neglected. Principle of quarantining houses one important contribution. Beginning of the era of sanitation.

2. Settlement and development of the colonies

Druggists came from Europe. First drugstore in Boston in 1646. Lack of food and health education hindered the development of the colonies. Bloodletting, a heritage from Europe. Benjamin Rush, professor of medicine, College of Philadelphia, called bloodletting "the sovereign remedy." He was bled to death by his own doctor in 1813.

3. Conditions of the colonies on the eve of the Revolution

Causes of the American Revolution

The War for Independence

Two medical schools in colonies before Revolutionary War. Most practicing physicians never attended medical school; served as apprentices to other physicians. Quacks were overrunning the country, and personal health was seriously affected by treatment from such quacks.

At outbreak of the Revolution, a good physician was Dr. John Morgan, chief physician of the Continental Army, who showed that pus came from blood vessels and not from solid tissue.

Sanitary conditions in army camps and hospitals during Revolution were almost primitive. Mansions of rich had no plumbing. Troops were ordered not to be quartered near swamps, as it was believed the

"miasmas" from marshes brought disease. Soldiers were ordered to cut hair short. They were inoculated against smallpox. Typhoid, dysentery, and typhus took a heavy toll. Army lacked sufficient medical supplies. Ignorance of medicine, inefficiency and squabbles among doctors. Army sanitation just starting. Nine soldiers died of disease for every one killed by British bullets.

4. Political and commercial development between 1815 and 1845

 The settlement of the territory west of the Mississippi

Communities started to organize their water supply, their sewage disposal, and their community health activities. Movement for development of boards of health and health officers accelerated. Officials did not know what steps to take to protect the health of the public.

Health education on the frontier was left to the family itself. Doctors few and far between. Health conditions far better than in the crowded eastern cities.

5. The industrial revolution

 Effects of the industrial revolution upon American life

The industrial revolution brought about an increased need for health education, community and personal health. It saw the beginning of sweatshops and crowded living conditions in the cities. Movement of people to the industrial centers created such crowded living conditions that disease and ill health were greatly increased.

Workers in sweatshops labored under such poor conditions and for such long hours that they were old long before their time.

Sweatshops brought about an increase of injuries to workers because of poor working conditions. Homes were broken up through use of child and woman labor in sweatshops because they would work for such low wages.

More attention was being given to health activities in the cities because of

crowded conditions. Municipal housecleaning phase.

d. Suggestions for using health materials in high school courses in mathematics, algebra, geometry, and trigonometry.

MATHEMATICS PROBLEMS	HEALTH CORRELATIONS
1. Insurance	1. Obtain graphs from an insurance company showing life expectancy and the relation to obesity. Also obtain information on the method by which rates are determined.
2. Taxes	2. Find out the cost of ill health to your community and school. Relate this amount to the cost of improved conditions.
	3. Find out how engineers design highways and how they consider safety at intersections and curves. Relate this information to the accident rate on modern highways.
3. Ratio and proportion	4. What is the recommended maximum population concentration? How does this recommendation have meaning for the police, public health administration, and recreation bureau?
	5. According to your local safety council, what is the relation of traffic accidents and intoxication?
	6. Find out how much farmland is required to feed an average man. How much is devoted to the four food groups?
	7. What part of the caloric requirements is supplied by each of the food groups?
	8. What is a budget? What proportion of the budget goes to health (a) in your family, (b) in the community, (c) in the nation?
4. Progressions	9. How many hours sleep does the average high school student need daily? How does this need change as a person develops?

10. How does fatigue progress as a person does a monotonous task?
11. Make a graph showing the annual increase of death and injuries from automobile accidents during the past ten years.

5. Data and scales

12. How are standard height and weight tables developed? What scales do we use for height and weight? Find out what the scales are for shoe and clothing sizes.
13. What are normal measurements for basal metabolism and blood pressure?

6. Charts and graphs

14. How many people in your school have each of the various eye diseases? What would be the most profitable type of service for these people in your school, that is, how might the school develop a program for detecting and referring these cases?
15. Make a graph of the number of people in your school who have had the various vaccinations and inoculations.[8]

e. As a unit of work in the course "Problems of Democracy" it is possible to make a study of official and voluntary health agencies as suggested in the following partial outline:

I. The study of official and voluntary agencies and their function in public health; the Public Health Service, Local Health Department
 A. Introduction and background material
 1. Promoting and conserving health is one of the most important functions of government at both state and local levels
 2. Recently, the national government has expanded its health activities tremendously
 3. The life span has increased twenty years
 a. But, the annual cost of illness in 1950 was over eight billion dollars
 4. Public health is purchasable; efficient public health administration can save lives and prevent the spending of millions of dollars in direct and indirect costs of illness

[8] Adapted from Don Chapman, Columbus, Ohio, The Ohio State University, 1959.

B. Definition of public health: the art and science of preventing disease, prolonging life and promoting physical and mental efficiency through organized community effort
C. Definition of public health administration: the application of public health principles and techniques for the benefit of the community, by official or unofficial organizations
D. Three main types of local health units:
 1. Cities with their own full-time or part-time health departments
 2. The county unit system: a county health department serving the public health needs of the rural and urban areas
 3. A plan whereby two counties join to form a single health district (may include more than two counties)
 4. A 1944 study of local health units by the American Public Health Association concluded there were too few (18,000) and far too few full-time health officers, public nurses, and other health department employees
E. Functions of local health departments: to collect vital statistics; to control communicable disease; to educate in the area of public health; and to perform other services including environmental sanitation, hygiene, nursing, research, laboratory services
 1. Most divisions of public health departments are organized on a functional basis
F. Organization of public health departments
 1. Three choices usually in deciding how the health department shall be run:
 a. A board
 b. A single administrator
 c. A widely used compromise plan, by which an elected or appointed board selects a chairman or executive to assume responsibility for administration activities
 2. Most authorities believe that bureau and division heads should be chosen through civil service examinations, as should the rest of the department personnel
G. The Constitution delegates no power over public health to Congress; therefore, most of the responsibility in this field has been in state and local hands
H. Relationship between federal, state, and local functions in public health administration
 1. Federal government
 a. Congress obtains power to enact laws regarding public

health from its power to tax and appropriate funds for the general welfare, to regulate foreign and interstate commerce, to govern territories, and from emergency war powers

b. Federal agencies (divisions of Department of Health, Education, and Welfare): Public Health Service, Children's Bureau, Office of Education, Food and Drug Administration, Office of Vital Statistics

c. Four main functions of the Public Health Service:
 (1) conduct research, compile statistics and information
 (2) administer grants to aid states and private organizations for public health purposes
 (3) provide states with services to aid them in building public hospitals and health centers
 (4) aid in strengthening state public health programs . . .[9]

POSSIBILITIES AND LIMITATIONS

It is clear that there can be a profitable reciprocal relationship between health education and other subjects. In teaching about disease control the health educator can further the understanding of scientific concepts in bacteriology. In dealing with heart action and respiration a sound comprehension of the physics of space and atmosphere can be enhanced. The health education program both gives and receives from other areas. And yet, there are limitations to this type of interchange.

The best-developed correlation plans will not reach all the students in school with all the material, nor will all the material from the broad area of healthful living be included even in the sum of the offerings of all the other areas. Many students will miss entirely the important contribution which home economics makes. Others will have only limited study in biological science. It can be demonstrated from studies on student needs that even after the absorbent powers of these other areas have been taxed to the limit there are still human health problems untouched. Correlation plans at best are never perfect; they never can cover the area of healthful living as it should be covered.

F. A. Meier reports a study of the correlation between health

[9] Adapted from Miss Linda Mannix, Columbus, Ohio, The Ohio State University, 1959.

instruction and general science in which he shows the health areas most and least frequently treated in general science textbooks.

Most frequently treated: disease, eyes, food, heart and blood, air and sunlight, education for parenthood, general physiology, elimination, ears, nose and throat.

Least frequently treated: alcohol, tobacco, drugs, teeth, posture, feet, exercise, first aid, mental hygiene, sleep and rest, safety, health agencies, home and family, clothing.[10]

Meier's investigation shows rather clearly how difficult it would be to rely wholly upon the field of general science to get the job done which is needed in health instruction. But it also shows how reasonable the correlation possibilities are between the two fields. If general science and health instruction are both taught in the same school, the teachers should become familiar with their respective efforts to avoid any wasteful duplication and to compare the nature of the material they are teaching.

From these most likely areas the others shade off to a point where deliberate correlation with health material becomes a labored process. It would be difficult, for example, to write a very good play about the vitamins or do acceptable poetry about the various molds and bacteria which are dangerous to man! The pattern of correlation eventually reaches the point of diminishing returns. It is apparent, however, that in literature discussions of organic, psychological, and emotional problems or of heterosexual relationships as revealed in biography, fiction, or history would be valuable. Similarly, one cannot overlook the value of the singing and playing of music which is a healthful experience in itself. Actuarial tables, vital statistics, and population trends might well be the subject of mathematical discourse. Thus in these less likely areas there are possibilities but also real limitations.

Health material does not lend itself gracefully and conveniently to all areas equally well. The health content to be incorporated must never violate good standards in the host area. To draw a picture with a health motif may, and probably will, result in bad art as well as bad hygiene. Composing a song about Vitamin A may be sorry music. No host area

[10] Frederick A. Meier, "Opportunities in General Science for Health Instruction," *Research Quarterly*, December, 1951, p. 434.

should be asked to use health material unless it is contributory to that area and hygiene alike.

Teachers' qualifications vary so that a health coordinator should be rather chary about encouraging a social science teacher, for example, to deal with current issues of medical care *unless the teacher is adequately prepared to do so.* Biology teachers can make mistakes in dealing with human sex life if they are relying only upon their knowledge of animal life. Teachers must be well prepared to handle human health problems if they are to be handled at all.

ADMINISTRATION

To develop and administer a program of correlation properly the following conditions are necessary:

1. An individual or small committee must become sufficiently familiar with all areas of study and with the wide area of health education to recognize where each could enrich the other, and be prepared to make recommendations for the inclusion of health material in the other areas.
2. The faculty must be receptive to the idea of correlation and ready to receive and use such recommendations as appear reasonable.
3. A program of in-service training should be provided for the teachers involved to improve their ability to handle the acceptable health material.
4. Conferences should be held during the year as necessary for the exchange of ideas between teachers in the different areas, for example, between the social science teachers and the health group. Such conferences would be useful in checking facts, exchanging teaching materials and ideas, agreeing on purposes, and setting directions.

SELECTED READINGS

In addition to the suggestions contained in Chapter 8, the following will be useful in further study of the problem of correlation:

Daly, Ruth P., "Health Projects in Eighth Grade Science," *Health Education Journal,* Los Angeles City Schools, XXI, Nos. 10–11 (November, 1957).

Grout, Ruth E., *Health Teaching in Schools,* Third Edition, Philadelphia, Saunders, 1958.

Meier, Frederick A., "Opportunities in General Science for Health Instruction," *Research Quarterly,* December, 1951.

National Education Association and American Medical Association, *Health Education,* Fifth Edition, Report of the Joint Committee on Health Problems in Education, Washington, D.C., 1960.

— 7 —

Integration

In the evolution of education seldom has a concept and program developed which has been more controversial than that of "integration in learning" or "the integrated curriculum." The terms associated with integration such as "core curriculum," "broad fields," "resource unit," and others are strange; they are, in fact, rejected by some because they seem to pose a threat to the traditional ways of doing things. Frequently one hears condemnation of the core curriculum because of its association with the "progressive education movement" or with certain philosophical viewpoints. The condemnation is wholly undeserved because the critics most generally fail to understand the basic purposes or nature of the points of view which give rise to "integration" as a process in education.

Actually the concept holds great promise for the enrichment and effective focusing of education. For health education it presents an unusual opportunity for the development of an understanding of health in relation to contemporary problems in our society and the realization of full personal development in terms of the "wholeness" of the organism.

Definitions of Terms

"The word *integration* is used to refer to both a *state* and a *process.* As a *state* it implies the attainment of perfection, completion, or wholeness. Integration in this sense is a goal toward which every individual and social group presumably should strive. As a *process,* however, integration refers to the means used to achieve this state of perfection. Integration can also refer to the manner in which the interdependent

parts of a larger whole relate or are brought into harmonious relation with each other."[1]

Integration involves the adjustment of parts to a whole; all the parts work smoothly together, with no friction, nothing out of step, and thus function with maximum efficiency. To integrate is to relate parts to the whole—it makes no difference what the "whole" or purpose is. A well-integrated automobile is one in which all parts—carburetor, spark plugs, tires, chassis, driver, battery, and all the other thousands of parts—mesh smoothly together to provide safe, economical, and pleasurable transportation. Let the battery go dead, the spark plugs become fouled, or the driver be intoxicated, and disintegration has set in. The "wholeness" of safe transportation is not achieved.

A well-integrated battle requires complete and efficient interrelationship among all branches of the service involved and a complete meshing of individuals within those branches. The price of disintegration in battle is lives. A well-integrated gang of thieves functions smoothly in their antisocial activities by having each member coordinate his activities with the others to the end that the big bank robbery goes off without a hitch. Integrating is a process, integration is a state of affairs, but neither demands that its "wholeness" or its purpose be good or bad.

To seek integration in learning is to seek relationships, the "big ideas," the putting of things together. In traditional educational patterns from elementary school through college, learning is diversified and specialized. A student in college may not see any relationship between a course in the philosophy of education and one in general methods; and yet they may be related in their fundamental viewpoints. Physics and chemistry courses may be so taught as to represent completely separate areas of knowledge, and thus the student may miss the "big idea" of the physical basis for human life.

In seeking a "general education," sometimes referred to as a "liberal education," one must integrate many experiences in learning to the end that they lose their separate identity and become part of the characteristics of "an educated person."

General education, often referred to as the "common learnings," includes such things as ability to read intelligently, to speak clearly, to write effec-

[1] Adapted from Nelson B. Henry (ed.), *The Integration of Educational Experiences*, Fifty-seventh Yearbook, National Society for the Study of Education, Part II, University of Chicago Press, 1958, pp. 10–11.

tively, to listen and observe, to reason quantitatively, to think critically, to understand the physical world around us, to understand and to practice the principles of both physical and mental health, to understand the society in which we live. It further includes an opportunity to provide both meaning and direction to our lives through the development of a system of values, aspirations, and goals, *which frequently is referred to as a philosophy of life.* The general education is provided through a core of broad field subject areas. Each student is required to take six semesters of English and humanities, five semesters of social studies, three semesters of natural science, and six semesters of group guidance and health education.[2]

The process of integration thus seeks by selecting and organizing educational experiences "to replace a mystifying mosaic of many separated courses and unrelated curriculum experiences by an educational program which has unity in the eyes of most students."[3]

Integration as Applied to Health Education

The concept of integration applied to school health education requires some study and considerable experimentation before it will become most fruitful as an educating process. To develop an integrated health education plan in today's school requires time, skill, and imagination. Furthermore, in the confused state in which the whole idea of integration is held by some there is little experience in applying the concept to the various phases of health education. The term itself is sometimes confused with "correlation" but *to correlate* and *to integrate* are not synonymous although it is true that they are not mutually exclusive.

Integration, or the process of integrating, may be applied in health education in any one or all of five principal respects:

1. Integrating the individual, the child, the personality. One speaks of "the integrated personality." A well-integrated person becomes an object of admiration and respect.
2. The integrating experience. A planned organization of experiences which themselves produce an integrated idea, or an integrated person. It is a process of becoming integrated.
3. Integrating within the course itself. Health instruction need not be

[2] *Ibid.*, p. 203.
[3] *Ibid.*, p. 23.

a series of disconnected topics relating to the human body. Learning may be organized around large whole themes or problems.

4. Integrating the curriculum, the programs of study, the things that go on in the classroom. Thus, one may speak of "an integrated curriculum," a "core curriculum."
5. Integrating the school program, the entire experience of the child from the time he leaves home for school till he returns. One may thus speak of an "integrated program," or an "integrated health program," and imply the marshaling of *all* the forces in school around a common objective.

Now these five applications or usages of "integration" are not mutually exclusive. They are related and there are some shadings and peripheral developments of each which might easily be thought of as belonging to another. Nevertheless, in the interests of simplicity one may make these five applications first and later think through the process of integrating them!

INTEGRATION AND THE INDIVIDUAL

What kind of children leave our schools? Are they well behaved? Informed? Stable? Well? Debilitated? Nervous? Strong? Smart? Socially well adjusted? Physically mature? Happy? What kind of children do we *want* to graduate from schools and colleges? These questions are important as one tries to think through the functions of education anywhere. If educators contend, as many now do, that the purpose of education is the development of the whole child and not just his brain or memory, then teachers must look at all the "parts" of the "whole" child and determine what can be done for each and all of the "parts." A leading university reported a few years ago that its principal function was the "training of the mind," thus implying no responsibility for the rest of the complicated and potentially well-integrated organism that is man. To make such an assumption opened that university to two criticisms: (1) that it shared no interest with other modern schools and colleges in their devotion to the development of the "whole" man, and (2) that it believed in the spurious and untenable possibility that man may be divided into mind and body for purposes of "training." "Man is an emotional, volitional and active being as well as a rational being

. . . therefore the integration of learning experiences must not ignore the nonintellectual facets of human experience."[4]

But this is not the place to cite the evidence for man's unity. It must be assumed here that man is an entity, that his best growth, development, and maturity depend upon a successful interrelation of all of his parts, that neglect of any phase of his nature—physical, social, psychological, intellectual, emotional, or whatever—will leave its mark in disintegration of the whole. The school and college devoted to the development of the "whole" child must give thought to the thing they are devoted to and answer the question, "What sort of *person* is to be produced in this institution?"

It becomes good sense then to try to describe the sort of person the school wishes to produce. Shall he be tall or short, lean or fat, smart or dull, courageous or cowardly? Shall he be effective or poor in language, socially minded or selfish, a snob or democratic, sick or well? Even though the school can do little or nothing about *some* of the personal characteristics possessed by its students, nevertheless, committed to the development of the whole child, it must describe a well-integrated child and proceed to work toward that end.

The first step in the integrating process applied to school health education is, therefore, the establishment of those characteristics of desirable personal integration which can be used as objectives and *toward which every influence in the school must contribute and none detract.* This is usually done by putting a committee to work on the problem and asking them to bring before the faculty of the school a set of characteristics of a well-integrated child. Frequently such committees find it helpful to ask, "What would the ideal child, insofar as this school can affect him, be like?" Committees at work on this problem have produced some interesting characterizations of the integrated person. Here are some examples.

1. An integrated individual:

If a man gave his best to the task at hand, if he enjoyed optimal harmonious function of his physiologic and psychologic processes and possessed a normal anatomical structure, if he mastered his environment so as to be unaffected by its social and physical adversities, if his intellectual curiosity served to satisfy his potentialities, if he gave himself to communion with the Supreme Power, if he loved life for its own sake and gave no false

[4] *Ibid.*, p. 39.

opinions to his friends and associates, then that man would represent a bona fide integrated individual. But as a recipient and instigator of the luxury and blinding rush of modern civilization, modern man has made it rather difficult to reach that utopian level at which he could enjoy complete integration. In place of a calm, steady round of labor, with proper periods of mental and physical rest, he lives in and contributes to an age of ever-increasing hustle. He invents all sorts of worksaving devices, and in speeding it up he sacrifices his nerves and his peace of mind. He has virtually become a slave to a machine. He avoids outdoor games, feels that having fun is a sign of weakness, because his subservience to his own creations causes him to forget that he has himself to serve also. But if he would only stop for a moment and take stock of the endless procession of broken-down individuals that surround him on all sides as they race to their graves, he would perhaps wonder if such a strenuous life is worthwhile. Perhaps then he would use his creations to his advantage instead of to his disadvantage—an ultimate defeat.[5]

2. The faculty of the University Schools at The Ohio State University has for many years been working toward a satisfactory and workable set of objectives. Through committee effort and later faculty action, the school is directed toward making whatever contribution it can to develop what the faculty has called "Characteristics of an Individual with Optimum Health." The essential points of this remarkable effort are produced here. They have served well in guiding the actions of the entire school personnel toward an improvement in the health of children:

HEALTH IN THE AREA OF PERSONAL LIVING

1. The individual is gradually achieving a consistent and unified outlook on life.
2. The individual's evident vigor and tone imply reserves of energy and power of initiative indicative of successful adaptation to environment.
3. His bodily parts function with harmonious integration and optimum efficiency in energy transformations.
4. The individual has a sense of achievement.
5. He is gradually achieving status as a person through growth in independence, in establishing security and in developing a sense of belonging.
6. He is gradually freeing himself from childish egoism, and evidences growth in social sensitivity and willingness to sublimate personal desires for the larger concerns of the groups to which he belongs.

[5] Anon.

7. He understands the wide range of variability that can exist within the concept of normality, and in so doing he is becoming more able to accept and to live more intelligently with his own personal variations.
8. He understands his sex role.

HEALTH IN PERSONAL-SOCIAL RELATIONS

1. He has status in family relationships.
2. He has status in the various groups and with his age mates of both sexes through his effective participation in several functional groups.
3. He is frank, communicative, and sociable, and he enters heartily and with enjoyment into the spirit of social intercourse.
4. He is considerate and helpful and is growing in his concerns for other people, their plans, their successes and failures.
5. He is growing into a satisfactory heterosexual adjustment.

HEALTH IN THE WIDER SOCIAL RELATIONSHIPS

1. The individual has a zeal for promoting more healthful living through social reconstruction.
2. He is achieving status in society as a contributor to the furthering of more democratic ways of life within the social order.
3. He is achieving status in society through increasing economic independence and through social competence.
4. He participates effectively in social institutions.[6]

In the latter situation the laudable objectives set forth become meaningful and alive. The school is alert to contributions to these objectives from all areas. The report of the Health Committee goes on to cite the contributions made by the many and varied aspects of school life to each of the individual objectives. There is no gap between their theory and practice, between their ambition and their effort. Objectives in child development are established and their attainment is sought.

3. And another statement of such characteristics is provided by H. P. Smith in his description of the characteristics of the emotionally stable adult:

1. He has a feeling of security based on a belief in his personal competence. He rejects overdependence on others and values independence of thought and action.

[6] "A Report of the Health Committee," Columbus, The Faculty of The Ohio State University, Department of University Schools, 1942, p. 2. (Mimeographed.)

2. He makes decisions when they are needed; he does not worry unduly about matters that are not ready for his immediate attention.
3. He has learned to accept life, recognizing that joy and sorrow, health and sickness, will be his lot and the lot of those he loves. He does not ruin his enjoyment of the present with undue concern over vague, ill-defined disasters that may mar his future comfort and happiness.
4. He has learned to accept and to respect himself. He has found his place in life and believes that his contributions to the community are worthwhile.
5. He can face the unpleasant, receive criticism gracefully, and profit from his mistakes.
6. He has achieved freedom within the socially acceptable patterns of emotional expression. He is able to relax, to laugh, to love, and to enjoy life.
7. He gains emotional satisfactions from music, art, literature, sports, hobbies, and the companionship of others.
8. He is consistent in his feeling toward life. He does not show violent day-to-day variations in mood.[7]

4. Or, stated in terms of "developmental tasks," as Havighurst does, one could visualize the integrated youth as one who is successful in accomplishing the following:

1. Accepting one's physique and accepting a masculine or feminine role.
2. New relations with age-mates of both sexes.
3. Emotional independence of parents and other adults.
4. Achieving assurance of economic independence.
5. Selecting and preparing for an occupation.
6. Developing intellectual skills and concepts necessary for civic competence.
7. Desiring and achieving socially responsible behavior.
8. Preparing for marriage and family life.
9. Building conscious values in harmony with an adequate scientific world picture.[8]

The foregoing illustrate existing efforts to establish a set of objectives toward which a school faculty may work. Such objectives become more meaningful when they are the product of the group using them. There

[7] Henry P. Smith, *Psychology of Teaching*, Englewood Cliffs, N.J., Prentice-Hall, 1957, pp. 360–361.

[8] Robert J. Havighurst, *Developmental Tasks and Education*, New York, Longmans, Green, 1950, pp. 30–56.

is no perfect set. Faculties should make their own, and then, when the wording is acceptable and the meaning clear, it should be obligatory on all to make every influence in the school contribute to and no influence detract from the attainment of these objectives for every individual child. If this program can be put into operation regardless of its imperfections, the school at least knows where it is going, what its goals are, and what it is trying to do for the health of its children.

To help the child develop his capacities, to develop "normally," is the oft-stated commission of the school health program. The concept of integration requires an enlargement of this statement to the point where the detail of it comes within the range and understanding of each member of the faculty. He will soon recognize that it is integration the school must work for—not *dis*integration. It can be made clear that an adolescent with tuberculosis, a child with an inferiority feeling, a boy with marked facial acne, or a girl ignorant of the best practice in menstrual care cannot attain better than a partial integration, cannot reach fullest capacity until the disintegrating factors are removed. Life becomes a constant struggle between the forces which would tear apart and those which would hold together. Where does the school stand? Do children emerge from their twelve mandated years in school better or worse off personally? Successfully to integrate the child would require the school to examine its program, its personnel, its curriculum and to make sure that "going to school" is an integrating and not a disintegrating experience.

The *process* of helping an individual become integrated requires a description of the characteristics of the state of integration and then a union of all efforts to attain it. It means direction, a focus for effort, a "whole" toward which all parts can, and must, work.

THE INTEGRATING EXPERIENCE

How much of "going to school" is responsible for the current toll of personality problems and general ill health is not accurately known. When a child is sent off to school at the tender age of 6 he is poorly equipped to deal with the overwhelming experience which will come to him. For five hours a day, five days a week, for thirty weeks a year, he will be exposed to the influence of teacher, classmates, administration, to curriculum, method, and environment. The experience is bound

to leave its mark. We are all the victims or the beneficiaries of our school life. Schooling can be helpful or harmful, favor child development or retard it, be an integrating experience or frustrating.

In our society the individual is the unit around which we build. Nothing in education becomes particularly significant until the individual recipient of this education organizes and relates his experiences to the point of effectively understanding what his life in his society is about. But it is he who must do the integrating. The school can do its best to present "an integrated view of all knowledge," provide experiences and skills which lie along the path of an integrated understanding—but without effort on the part of the student such activity on the part of the school can be relatively fruitless.

The curriculum which a child undertakes is, perhaps next to the teacher, the most important element in the school bearing upon child life. Studying, learning new things, tackling hard problems, responding to the pressures for advancement, can be made integrating experiences if the child's interests and welfare come first. Perhaps the best description of this application may be taken from *Health Education* as follows:

> The curriculum should provide not only diversified experiences, but also unifying ones which integrate the individual. A person is not a composite of separate areas of functions, needs or interests. One area interrelates with other areas so that the person functions as a whole. The observation of a normal child indicates that his behavior is concentrated, purposeful and whole-hearted. When these qualities are not present, the person is scatterbrained, inconsistent in belief and action, and compartmentalizes belief and action. An extreme lack of integration gives rise to emotional instability and blocking, loss of orderly behavior and physical incapacity.
>
> The program of the school should, therefore, promote the development of a person who behaves consistently and orderly, is emotionally stable and who acts upon thinking. Integration is so much a unique quality of a person or a group of persons that it cannot be planned for in advance by interrelating the various parts of the curriculum, such as relating one subject to another. Such an "integrated curriculum" reflects the integration of the person or persons who make it but just as likely as not, may tend to disorganize and upset the learner, rather than contribute to his integration. The best which can be realized is regularly to provide enterprises for children which have an integrating influence upon their lives. Integrating enterprises may vary greatly from a dramatic performance to an extended trip, or to the making of a community health survey.

The following criteria can be used to determine whether an enterprise has an integrating influence. It has integrating values if it,

1. requires an extended time from development to culmination, the amount depending upon the maturity of the children;
2. holds a high level of concern for the children and the staff;
3. requires socialization: interaction among children; group participation for planning, for outlining appropriate action and for making an evaluation;
4. utilizes for the most part skills already acquired by the children; does not involve for its success the acquisition of essential and new skills;
5. is scheduled so that large blocks of time can be devoted the enterprise;
6. is sustained by leadership and participation which give it direction and maintain a high level of productivity;
7. possesses normative elements: opportunities for making choices, for weighing values, for calculating consequences, and for making judgments;
8. offers potentialities for spreading into other activities which children initiate or are carrying on at the time.[9]

Certainly all teachers, particularly those of health education, should avoid teaching techniques and situations which thwart and disappoint, which produce insecurity and inferiority. The frustration attending the lecture because the student cannot "talk back," the blind-alley type of discussion, or the debate in which there is neither understanding nor concession must be avoided. These are, in themselves, nonintegrating experiences.

INTEGRATION AND THE SPECIFIC COURSE

It is in the organization and content of the specific course, or the curriculum, where the concept of integration produces the most radical departures from the traditional ways of doing things in education. If a separate course for health instruction is established, the good health teachers plan, with students participating, integrated units or projects within the course itself. An historical perspective will help teachers understand what this means. In earlier days the "lesson" was the most widely used element in which "a single day was treated as a discrete

[9] *Health Education*, Report of the Joint Committee on Health Problems in Education, National Education Association and American Medical Association, Fourth Edition, 1948, p. 201.

unit and the lesson plans for that day were more or less separate from other lessons which were planned for other days."[10]

Thus in health education there was a lesson taught on "dental decay" or "the structure of the heart" or "posture," each unrelated to any larger theme or central problem. The activity in the class the next day dealt with something quite different.

Then came the "topic," such as "the circulation of blood" or "the basic seven foods." This might last for several days.

But in recent years teachers have been inclined to organize learning around larger problems involving more extensive research, reading, and discussion, and requiring more time than either the lesson or the topic. Such unit construction has been described fairly well in Chapter 4, and it holds great promise for improving the quality of learning about health. Units developed within the course itself, in which ideas, resources, and evidence are mobilized around a "whole," a theme or a problem, have the advantage of being meaningful, understandable, and integrated. There are many such problems now in use among which the following are good examples:

1. A Study of Marriage and Divorce
2. The Healing Arts and Frauds
3. Feeding the Nation
4. International Disease Control
5. Organization of the Community for Health
6. Current Issues in Medical Care
7. The Control of Traffic
8. The Care and Distribution of Food
9. Health Insurance Plans
10. Local Problems of Disease Control
11. Food Adulteration
12. Dates and Dating
13. The Origins of Life
14. An Evaluation of Health Advertising

Specific outlines for two other such units are reproduced here from *Developing a High School Core Program* by Lurry and E. J. Alberty.

Problems of Family Living. How can family living make for happier individuals? Include such problems as: (a) Defining the characteristics of the democratic home; (b) Interpreting these characteristics in terms of be-

[10] National Society for the Study of Education, *op. cit.*, p. 123.

havior of the individual in the home; (c) Sharing in the maintenance aspects of family living; (d) Solving family conflicts through the family council; (e) Making a house a home; (f) Developing a consistent set of values to guide life through family living; (g) Having and rearing children; (h) Understanding myself and others as members of a closely knit group; (i) Creating our own home, i.e., problems of eugenics, courtship, marriage; (j) Considering the family as a unit in a democratic society and its relationship to other social institutions; (k) Planning in family living as to the use of resources such as time, money, energy; (l) Studying the effect of technological development on home life in our society; (m) Developing and understanding among family members of the problems of old-age; (n) Reconciling conflicts between home standards and community standards; (o) Participating as a family unit in developing community standards; (p) Considering similarities and differences concerning family life, in general, in a democracy and in other societies.

Problems of Constructive Use of Leisure. How can we become more interesting and better adjusted people through extending individual and group interests? Include such problems as: (a) Extending aesthetic appreciation, e.g., music, painting, literature, nature, science, through participating in experiences in these areas; (b) Having experiences in the special interest areas of the school, e.g., industrial arts, home arts, fine arts, dramatics, physical education; (c) Recreation in the home; (d) Hobbies; (e) Developing, extending, and maintaining adequate community recreational facilities for all citizens; (f) Developing a concept of creative experience as it is related to well-balanced living; (g) Experiencing individual and group activities as constructive uses of leisure; (h) Developing a basis for choice in acquiring recreational interests; (i) Developing a fair degree of skill in several types of recreational activity (individual and group); (j) Having experiences in which individuals and groups engage in creative activity.[11]

In the development of such units of work the health instructor hopes to guide the students into undertaking the study of a large problem and to make the study as rich as possible. Applying the process of integration to the separate course in health requires a sense of the unity of problem areas and a capacity to resist dividing the course into small fragments of anatomy and physiology for purposes of teaching these facts alone. One must resist the temptation to jump from topic to topic week by week in order "to cover the ground." The teacher must also

[11] Lucile L. Lurry and Elsie J. Alberty, *Developing a High School Core Program*, New York, Macmillan, 1957, p. 75.

have the ability to develop with the class the various aspects of the problem. If the class should choose to study, for example, "Current Issues in Medical Care," it would have to be treated as a core project and several weeks of work would be involved in its planning and execution. Thus, the learning about health problems would be thoroughly accomplished with some problems being given careful attention. This would, of course, be thought by some to be a disadvantage if time is limited or if only one semester in six years can be given to a study of healthful living.

INTEGRATION AND THE CURRICULUM

When the integrating process is applied to the curriculum certain changes are expected in the traditional subject-by-subject way of doing things. Actually the fundamental purpose of an integrating effort is not different from what any good teacher has hoped for in teaching any given subject—namely, wholeness and meaning. Fragmentation (cutting a subject into small and unrelated parts) and boredom or disinterestedness have hardly been intentionally sought by teachers! So that any effort to improve and enrich wholeness and meaning is worth attention.

This is particularly true in health education. Fragmentation *has* existed. Students have studied digestion, for example, with no conception as to its relation to energy or to one's purposes in life. Dental care has been a fragmented subject taught in no relation to priorities or one's conception of what is important in life. Somehow many health teachers have spoiled the study of health for many students by making health practices ends in themselves rather than relating them to on-going basic interests, concerns, or drives. Too often has the vitamin been considered all by itself rather than in relation to how one lives.

So, if the integrating process has some promise of making more cohesive and meaningful the study and practice of healthful living, it should be examined.

Definitions

As the teacher has sought greater cohesiveness, meaning, and relationship between "subjects," various combinations or plans for unifying have been developed. Some are more cohesive or integrated than others. For example, in some schools when biology and health education are

required of all tenth grade students, the teachers plan to talk about microorganisms and the germ theory of disease at the same time, thus developing a similarity of interest. When a number of such organized subjects are more or less closely correlated they sometimes are thought of as a "core."

In other instances there may be a theme such as "Health and Safety" agreed to for the ninth grade and the basic content of the subjects is taught in relation to the theme although the subjects, science, history, English, and others retain their identity.

There are varying uses an interpretations of "core"[12] but the one which seems most promising for health education is the one described by Harold Alberty as "a group of structured problem areas, based upon the common problems, needs, and interests of adolescents, from which are developed teacher-student planned learning units or activities."[13]

Such a concept of a core curriculum has the following characteristics:

1. It deals with the area of general education and hence is directed primarily toward the development of the common values, understandings, and skills needed for effective democratic citizenship.
2. Since it provides for general education, it is required of all students at any given level.
3. It utilizes a block of time sufficiently large to deal with a broad, comprehensive unit of work, with homeroom and guidance activities, and with individualized instruction.
4. It is based upon the common problems, needs, and interests of youth as ascertained by the teaching staff and the core teacher in cooperation with his students. It draws freely upon all pertinent resources, including logically organized subjects or fields of knowledge.
5. It has a clearly defined but flexible scope and sequence based on preplanned problem areas derived from the major values of democratic living and the common problems, needs, and interests of students.
6. Instruction is based upon learning units derived principally from the established problem areas, which are planned, carried forward, and evaluated by the teacher and the students.
7. It is supported and reinforced by a rich offering of special-interest activities—both formal and informal—designed to meet the particular needs of students and to levelop their unique capacities, interests, and talents.[14]

[12] Lurry and Alberty, *op. cit.*, p. 25.

[13] Harold Alberty, "A Sound Core Program," *Journal of the National Education Association*, XLVI, No. 1 (January, 1956), 20.

[14] *Ibid.*, p. 21.

This concept of *core* means that for any given grade there will be chosen, after a long and involved process, a problem area within which learning experiences and activities will be organized. Does this mean that the study of health, like the study of mathematics, or spelling will lose its identity? Not necessarily. Actually, as it happens in many situations where this form of core is used *some* fields of knowledge are given a *double* treatment—in core, and by themselves.

But perhaps the best way to see how this operates is to use some examples of core effort first and then discuss the ways these units come about.

Examples of Problem Areas

1. In Garrett County, Md., the teachers have arrived at some *large problem areas* for their core program in the junior and senior high schools. These roughly define the areas of study within which resource units and teaching units are prepared. These problem areas are:

7th Grade	*10th Grade*
School Living	Intercultural Relations
Health and Safety	Living in One World
Transportation	Leisure and Recreation
Communicating Ideas	Communicating Ideas
8th Grade	*11th Grade*
Knowing Garrett County	American Heritage
Natural Environment	Personal Development
Leisure and Recreation	Establishing Beliefs
9th Grade	*12th Grade*
Making a Living	Family Living
Establishing Beliefs	Role of Education
Consumer Problems	Making a Living
Personal Development	Health and Safety
American Heritage	Consumer Problems
	Technology of Living[15]

2. Or, still other examples of large problem areas are given by Lurry and E. J. Alberty:

[15] Harold Alberty, *Reorganizing the High School Curriculum*, Revised Edition, Macmillan, 1953, p. 184.

In the seventh grade:
- Problems of School Living
- Problems of Personal and Community Health (with emphasis on personal health)
- Problems of Intercultural Relations
- Problems of Economic Relationships

In the eleventh grade:
- Problems of School Living
- Problems of Self-Understanding
- Problems of Democratic Government
- Problems of Conservation of Natural Resources
- Problems of Community in a Contemporary World
- Problems of Home and Family Living[16]

Examples of Units

1. A fifth grade class once spent a semester as a part of their study of "The American Heritage" examining the life and times of the American pioneer. Three hours each morning were spent in the process. They studied his life, his diseases and causes of death, his trails and geography, his government; they made a Conestoga wagon one-fourth scale; they sang his songs, danced his dances, played his games, and wore his clothes; they studied his life from every aspect and in so doing made innumerable applications to contemporary life. They used the resources of library, shop, and laboratory. They learned about mathematics, engineering, geography, hygiene, music, and science. They studied all of these things and yet they studied none of them. *They studied the pioneer.*

2. An eleventh grade class chose to spend a year on "The Span of Human Life—Its Origins, Developments, Changes, and Emphasis." This was related to the problem area of "Personal Development." This required three weeks of planning before the first wheels turned. The sweep of man's life was divided into the convenient periods of prenatal, infancy, childhood, adolescence, maturity, and senility. Committees were put to work studying these. The causes of sickness and death and comparative life expectancies were explored; the actuarial problem became a fascinating study of the productive uses of mathematics. Factors influencing growth, growth spurts, relation of physique to intellect, at-

[16] Lurry and Alberty, *op. cit.*, pp. 95–96.

tainment, and personality were all explored with the aid of science teachers, school physician, and resource specialists.

The project was alive with laboratory and experimental possibilities. The students did an inordinate amount of studying on the problems of human life and the interest throughout the year was at a high level. The information acquired about human health was enormous, and if interested study predicts a transition to effective behavior then the results were gratifying.

3. An earlier grade, perhaps the sixth, could handle this unit on "Problems of Community and Personal Health" from Lurry and E. J. Alberty.

How can we achieve and maintain healthful living for ourselves and all others in the community? Include such problems as: (a) Ascertaining my present health status; (b) Understanding the problems and the importance of personal and community nutrition; (c) Understanding the facts about sexual development; (d) Cooperating with various community agencies in maintaining healthful living conditions; (e) Improving personal attractiveness and physical fitness by practicing healthful living; (f) Studying causes of accidents and removing these causes in homes and community, if possible; (g) Considering the social and economic aspects of personal and community health implied in health insurance, hospitalization, "socialized" medicine; (h) Providing and maintaining family health; (i) Understanding the problems of world health—the wider community; (j) Considering the present day causes of wide spread mental illness; (k) Understanding the importance of community and home life in development of mental health; (l) Considering the significance of recent findings in the field of psychosomatic medicine; (m) Clarifying the role of the federal government in making such protective devices as the Salk vaccine and fluoridation of water available to all.[17]

4. The following was a learning unit on "Insurance, A Means of Security."

This learning unit was constructed for and by an eleventh-grade class. The class was composed of twenty-two boys and twenty-seven girls. The unit was carried out in full during their daily core meetings from one o'clock to three-thirty o'clock in the afternoon and whatever additional times were required to gain the fullest advantage of the unit purposes.

The first week of class meetings was devoted to suggestions for unit subjects and the forming of committees on the subjects suggested. There were

[17] Lurry and Alberty, *op. cit.*, pp. 80–81.

eight such studies proposed that found the interest and approval of the students. Thus, there were eight committees formed, each member of the committee having interest in the respective study, and work was started on the organization and outlining of the various studies for presentation to the rest of the class for the final selection of a class unit study. In addition, these committees outlined the tentative path that the class would follow if their subject were selected in the final analysis.

The following two weeks were devoted to committee planning. The members of the class met in their committees every day during the core period to organize, investigate, plan, and outline the unit subjects. On the fifth day of the second week of committee planning all had completed their work on their subjects and the first was presented to the class.

In the week to follow the remainder of the subjects were presented to the class. Each topic was thoroughly discussed by the class. By the end of the week the class was unified on their selection of the unit subject—INSURANCE, A MEANS OF SECURITY.

The fifth week of class was spent making additions, subtractions, and reorganizations of the selected study outline. An extensive list of class purposes was prepared and the total unit outline was completed. Student interest was high, they were ready to go to work. The following major objectives were established:

1. To meet the students' needs for a better understanding of the part insurance plays in the individual, family, and community life of our society.
2. To assist the student in his formation of definite attitudes in relationship to the need for insurance in America's democratic way of living.
3. To satisfy the interest of the students in their thirst for knowledge.
4. To stimulate the seeking of answers to any and all problems concerning insurance and security for the population.
5. For the students to make sound and stable evaluations of all findings in regard to social and economic standards.
6. To apply the facts of this unit to personal insurance problems.
7. To influence others through the students' findings, learnings, and practices.

The following large problems were investigated by small groups and discussed in class:

1. What degree of security can we achieve through insurance plans? Definitions of terms and presentation of tentative evidence on need for security in the family.
2. What insurance needs are recognized?

a. What amount of security does the family and home receive from hospital insurances?
 (1) How does hospitalization insurance function and what does it cover? Discussion on illnesses and accidents within the community that necessitate hospitalization.
 (2) Relation of medical costs to other expenditures in the home.
 (3) Number of people that need hospitalization but are not financially capable of having this medical attention. Could they be helped through hospitalization insurance? How would socialized medicine affect these people?
 (4) What is community reaction to hospitalization insurance? Attitudes of heads of families, hospital, management, medical societies.
 (5) Conclusions.

b. What does accident and health insurance mean to our security?
 (1) Understanding the coverage of accident and health insurance. Critical discussions of policy benefits.
 (2) Is there a need for accident and health insurance? Study of various hazardous community occupations. Number of working hours lost each year due to accident and health problems. What is the loss to industry? What is the loss to the working man? Number and types of accidents other than in industry resulting in loss of man-hours.

c. Will life insurance give my home security?
 (1) Whom does a life insurance policy protect?
 (2) What is the average life span of today's American man and woman and how does it apply to life insurance?
 (3) What advances has modern medicine made to increase the average life span?
 (4) The effect of a lowered mortality rate upon life insurance

d. In what way does liability insurance affect my economic and social security? The laws governing non-payments of damages from persons convicted.

3. Study of present problems concerning insurance within our society and suggestions for possible relief of the problems.
4. The final evaluation of the unit.
 a. How far have we come in achieving our objectives?
 b. What improvements can we make in our next unit to improve its content over the unit just completed?[18]

[18] Abridged from report prepared by Fred J. Kreutzfield, Plymouth, Ohio, High School, 1951.

5. The following illustration is not given in full. The material has been selected from an outline of a study unit on the steel industry for purposes of highlighting the opportunities within the unit for the study of health.

The class, after hearing each committee report decided that their unit would be an investigation of the steel industry. The subject held a natural interest, for nearby was a large city containing many steel mills, also some of the students' parents, relatives and friends were employed in the industry.

The next step for class decision was to set up some specific objectives to guide them in their investigation. Following are a few of the students' suggestions:

1. To become acquainted with the various positions in the steel mill and the opportunities associated with this type of work
2. To obtain information as to the process of making steel
3. To secure a knowledge of the development and history of the steel industry
4. To understand the principles of tonnage, percentage of raw materials used in the steel making process, bonuses, pay rates, shipping costs and freight rates
5. To investigate the recreational opportunities afforded to the employees
6. To obtain information about the cafeteria and the type of meals usually served
7. To study about their emergency care program
8. To investigate the organization and function of the union
9. To determinate what type of insurance is provided for the workers
10. To investigate the causes of so many accidents
11. To obtain information relative to their safety rules and regulations

The committee directed to deal with the many health implications of the industry decided to begin its work with an investigation of accidents occurring in a mill. They obtained material from insurance companies and other sources which calculated the statistics dealing with the type, cause and number of injuries incurred by steel mill employees. They noted these statistics computed on a nation-wide scale and then took a trip to a mill where they studied the accident statistics from the mill's records.

Several lectures were given by the mill personnel, such as the safety director and the first aid team, films were viewed, and cause and prevention of accidents was dealt with in detail. They visited the mill dispensary where minor injuries were treated by the mill's doctor or nurse; then observed the facilities and equipment; listened to the nurse and doctor lecture relative to

the many aspects of their positions; witnessed a demonstration performed by one of the mill's first aid teams; and later these same men gave an interesting discussion of actual emergencies in which they were called upon to administer first aid. As a sidelight the first aid team presented a description of an accident and then questioned the group to determine just what they would have done in that particular emergency.

Following this an investigation was made into the medical care program for the workers. Compensation was investigated as well as insurance for hospital care and benefits. A visit was made to one of the hospital wards where they saw actual cases of those benefiting from the insurance program. They studied the advantages and disadvantages of all types of health insurance, and even discussed economic conditions of the home resulting from injuries that disabled the mill workers.

It was noticed in one of their visits to the mill that many of the workers took small white pills with regularity. This led to a discussion about salt tablets and the body demand for salt. Clarification of this question led to study of the anatomy and physiology of the body in respect to better explaining the body's need for salt. They studied about heat exhaustion, its treatment, prevention and symptoms. Burns were discussed, their degree of severity and treatment, which led to a further discussion relative to tissue growth, skin grafting and composition of the skin.

After noticing the large amount of dust in the air and the amount which collected on the worker's clothes the question of whether or not this dust would injure the worker's lungs was brought up. Breathing was discussed and it was found that the nose acted as a filter and passage-way to the lungs. Here the class touched on anatomy to discover this passage-way, its structure and function. The lungs were then studied relative to structure and function and it was decided that the dust itself would not be directly injurious to the lungs, but there was an indirect possibility it might be. Diseases of the lungs were studied briefly or thoroughly as indicated by their relation to the central study of the steel mill. Silicosis, however, was one condition which seemed pertinent enough to warrant a thorough investigation . . .[19]

6. There have been many excellent study units developed by workshop groups devoting considerable time to a complete exploration of one theme. An example is found in a mimeographed document entitled "Science: Servant or Master?" which was prepared with the counsel of Dr. Harold B. Alberty, Professor of Education at The Ohio State University. Obviously the entire project cannot be reproduced here

[19] From J. Brian McCall, University of Maine, Orono, Me.

but enough of it will be given to show rather clearly the essential parts of the unit, its manner of construction, and some of the integration of health material.

THE MAJOR PURPOSES OF THE UNIT

1. To help the student to understand the meaning and significance of the scientific method in solving problems of human concern.
2. To develop in the student an appreciation of the scientific attitude and an ability and desire to use the scientific method in its generalized form (i.e., reflective thinking) in solving his problems.
3. To help the student to understand the problems which have arisen in all areas of living because of the growth of technology, e.g., health, social-economic life, morals and ethics, and on his own level to help solve these problems.
4. To help the student to realize the dangers of both utilizing the fruits of scientific achievement for destructive ends and the possibilities of utilizing them for the advancement of human living.
5. To help the student to develop consistent attitudes toward the problem of applying science to living.
6. To help the student to see the connection between the method of science and the method of democracy.[20]

Alberty's workshop group devotes its Section 10 to a development of the meaning of science. With a good bibliography and ample footnotes, the unit presents its discussion by defining science, showing its evolution, presenting the differences between pure and applied science, showing the method of science, and applying the scientific method to contemporary problems.

In Chapter 5, "The Scope of the Unit," there is a cogent discussion of the impact of technology and the scientific method on (1) social living, (2) economic living, (3) religion, ethics, and morals, (4) healthful living. In this last section will be found most of the material which health educators look for when they seek to determine how their area is faring in an integration plan. In this instance health and hygiene fare rather well and only limitations of space prevent the illustration here of that fact. The following excerpts will, however, give a fair impression of how the area is handled:

[20] "Science: Servant or Master? A Resource Unit for Teachers," The Ohio State University, 1946. (Mimeographed.) For a complete discussion of the resource unit technique, see Alberty, *op. cit.*, chaps. 9, 10, 11.

V. Scope of Unit

D. Science and Healthful Living

Introduction. Early man lived in uncertainty and fear. His world was mysterious. Nature seemed unpredictable and undependable. Storms, famine, sickness, and death made him afraid. For these disasters, he blamed evil spirits and unfriendly gods. Sunshine, plentiful food, and health made him happy, and for these he thanked good spirits and friendly gods. The early Greeks were the first to break away from such superstitions. They began to ask the "why" and "how" of such things. Believing that nature was orderly, they tried to develop a new method of understanding her ways.

The rapid progress made in discoveries and inventions in the nineteenth and twentieth centuries would not have been possible if the early scientists had not prepared the way. The magnifying lens, for example, has helped us better to understand the nature of all living and non-living things, and has brought to our knowledge the existence of a world of microscopic life unseen by the naked eye. This invention has had a profound effect upon the study of disease. Without our many inventions and discoveries we should still be living among the discomforts of the Dark Ages. With them, we have effective weapons for fighting disease and death. . . .

In spite of the advancement of science in the area of health, many problems need to be solved before optimal health may become a reality in America.

Problems and statements of position. First of all, there is a problem of the applicability of scientific method to the solution of *all* problems of health. There seems to be no opposition to the application of science to the improvement of livestock and plants, and great strides have been made in this direction, but when it is proposed that similar methods be utilized for improving human beings, many groups, particularly in the religious field, enter objections. The application of technology of birth control, eugenics, sterilization of the unfit, and the like, are held to be contrary to the laws of God. These groups resist any attempt to interfere with "natural" processes. Thus there develop rival hypotheses which need to be carefully examined in the light of the supporting evidence. These conflicting positions may be stated as follows:

1. The scientific knowledge and techniques which have proved to be effective in improving plant and animal life should be applied without limit to the problem of improving the human race.

2. There are "higher laws" which control the processes of human

reproduction, and the improvement of the human species, and these must not be violated. Science may be applied up to the point where it interferes with these "higher laws," but beyond that point it must not go.

Somewhat related to the above problem is the question of the extent to which science should be applied to the healing of disease. . . .

A third problem has to do with the issue as to the extent to which healthful living for *all* citizens should be regarded as a public function. This is one of the most important problems confronting the American people today. Like the issues discussed above, there are widely differing positions bearing on this problem. The groups advocating each of these are made up of honest and sincere people who believe that they have the solution of the problem.

VI. Activities for Groups and Individuals

The following list of activities is designed to suggest to the teacher the wide variety of possibilities for making the learning unit interesting and worthwhile. Most of them are addressed to the teacher rather than to the student. This does not mean, however, that they are to be assigned in an arbitrary manner. Rather they should be discussed by the class to discover whether or not they meet the needs of the group. The resourceful teacher will think of many other types of activities, and students are bound to have many other fruitful suggestions. Out of teacher-student planning should come an initial selection of activities which may be supplemented as the unit progresses.

No attempt has been made to classify the activities as to the appropriate sequence in the development of the unit. This is a matter that can best be worked out in the local situation. It will be noted that many of the activities involve areas such as social living, economic living, health, and morals and ethics. It will be noted too that there is abundant opportunity to utilize material from fields such as science, social studies, language and literature, mathematics and the arts. The organization of the curriculum in the school in which the unit is to be used will determine the areas which should be drawn upon. The idea, of course, is to utilize all areas that are pertinent to the problems that are being studied.

1. If a group is particularly interested the members might make a list of the commercials that are heard time and again over the air. These might be analyzed as to their scientific truth and the findings could be presented to the class. . . .

11. As an outgrowth of the study of recreational activities a discussion

of hobbies based on some scientific principle or on the scientific method might develop. Students working on this might explain and show their personal hobbies to the class. . . .

19. The destructive usages of science in our daily lives might be studied. The class may, through reading and exchanging ideas, list the ways science has brought disaster, sorrow, and destruction to mankind. Possibly a group will be interested in making a mural or a frieze that depicts the way science has progressed in militaristic weapons starting with a sling shot or bow and arrow up to our modern war machines. The class could study and then discuss the questions—"War has always been inseparable from science," or "There is a relationship between the frequency of wars and the rise of science." A group of students might find it interesting to make a scrap book on the way science is used to destroy or retard civilization. . . .

27. Many are aware of the present plight of American housing. It might be suggested to the class that there are real obstacles to any improvement. It seems that there are three tantalizing questions which need special treatment. (1) Redevelopment of slum areas, (2) Government assistance for the lowest income families, (3) The advisability of home ownership. Someone may wish to take one or more of the tantalizing questions involved in the problem and try to discover a solution. Scenes from Slum Land before and after in sketch, story, or play might result from this work. . . .

56. The students are quite likely to be interested in the superstitions held by members of the class. A survey of these might be made and some attempt to discover their origin might be of concern to the committee. These superstitions could be set up and examined just as the scientist tests his tentative conclusions. Some attempt to get pupils to examine their reasons for their superstitions might come about through examining stories like the following. A young lady named Susie Q. always kept a good-luck charm in her automobile. But Susie Q. also took out insurance on the automobile. A committee or even the entire class might make a collection of stories similar to this and the following classification might be developed: (1) Common superstitions, (2) Rare or unusual superstitions that have their origin almost completely lost in antiquity, (3) Regional superstitions, (4) The farmer's superstitions, (5) Primitive superstitions. . . .

59. Some group in the class may be much interested in the broad health program that is being considered as socialized medicine. A thorough study of the plan might be made and the definition of the term, "socialized," clearly stated for the class. A critical examination of all phases of the plan should be critically made by the group as it works so that when it presents its findings to the class both weaknesses and strengths would be pointed out. Countries that have tried socialized medicine or industrial concerns

that have operated in part in this plan should be noted and the success or failures studied. Probably any group will be divided on this issue. The main purpose of an activity of this nature is to help get the facts before people for examination. Free and unhampered discussion on all phases should follow with no right answer in the minds of either the teacher or the group as the final answer for the whole class to accept. . . .

63. A study of the life and work of Pasteur and how he finished a piece of work and went on to the next, how he worked, and what tangible results he had to show for his work might help to give a student some insight into the scientific method of work.

64. The class might make a survey of the health facilities which are found in the community, the services rendered, number of people served. Some questions concerning how these agencies operate, who supports them, and how effective these agencies are in improving health in the community might be studied. Representatives of the various agencies might be invited to talk and questions which concern the group might be presented to the speakers. . . .

75. It might be suggested to the group that well-informed people see many changes ahead in the way we live and in our attitudes toward recreation, education, health, religious activity, use of language, family life and even in our thinking. These changes grow out of developments in air transportation, it is thought. This provides basic material for many investigations. If the group is divided in its thinking (as is quite likely) on this hypothesis, issues might be set up and round table discussions or panel discussions developed. A group should summarize its findings and suggest some action which the class might consider in the light of their acceptance of conclusions. . . .

Steps in the Development of Units

To develop such units and to alter the traditional curriculum in order to include them requires time, patience, a cooperative faculty, teachers and students willing and able to plan together, ample resources and freedom to use them, and a lively imagination and enthusiasm on the part of the teacher in charge. If such unit or core plans have never been used in the school before, care must be exercised to orient the students to the purposes and nature of the approach so they will be sympathetic to it.

In any curriculum development or reorganization the teacher or the committee should bear in mind the four principal elements within which some considerable manipulation is possible: (1) there must be an

agreement on objectives; (2) there must be selection of a set of experiences likely to achieve these objectives; (3) there must be organization of the experiences to achieve the greatest progress in regard to the objectives; (4) finally, there must be evaluation to determine the extent to which the previous decisions are well advised.[21]

With those four major elements of a curriculum in mind the planning group involving both teachers and students can proceed with the following steps:

1. A period of orientation of new personnel with the nature and course of the project is undertaken.

2. A discussion of criteria by which the final selection of the study unit will be made is held. The class will not want to select units willy-nilly. Definite criteria for unit selection should be discussed, presented, and then practiced. Facts or problems like the following should be considered:

 Does the unit involve the common interests of all?
 Is the problem broad and important?
 Will it make a contribution to the basic purposes of the school?
 How much time does it require?
 Will it be a continuous experience?
 Will it require specialized laboratory equipment?
 Does it require specific skills?
 Are there resources available?
 Does it provide for skills which will lead toward growth in tolerance, language arts, creativeness, written and oral expressions, critical thinking, self-direction, cooperativeness and aesthetic values?
 Does it lead on to other problems?
 Does it provide opportunity for use of problem-solving techniques?
 Does it provide a balance of over-all relationships between felt needs and the demands of society?
 Does it provide opportunity for cooperative planning?
 Does it provide for the integration of knowledge through the use of subject matter as it bears upon the problem at hand?

3. The class will have many suggestions of seemingly worthwhile problems for the year's (or half-year's) work. Freedom should be allowed all to propose problems for study within the framework of the problem area for the grade.

4. After all suggestions have been received the class should then begin the process of elimination and combination until some six or eight of the most promising ones are left.

[21] National Society for the Study of Education, *op. cit.*, p. 15.

5. The class should then be organized to investigate these promising ones. Voluntary committees can be selected to present the merit of the experience to be had if this one or that one were selected. These preliminary investigations are exploratory only and are for the purpose of revealing to the class what each promising problem involves.

6. Eventually (after ample time has been given to consider the various proposals) the class will select one (which might have been unique originally, or it might be the result of a combination of two or more of the originals). This selection must be arrived at democratically and not as the result of a pressure group's arguing for its favorite project. The one selected should be selected on the basis of merit, interest, and potential contribution to the educational growth of students and in full light of the criteria previously agreed to.

7. After the selection has been made, with the preliminary prospectus at hand, the class then amplifies its approach to the problem, making all plans for work upon it. This is a critical stage. Teacher and class together must work out the scope of the problem and their attack upon it. Things to be done, resources to be tapped, experiments to make, literature to use, analyses to be made, issues to be explored—all these things need to be sketched out at this point.

"Group planning is an essential element in democratic living and at this time progress is likely to be slow. Teachers may think that time is being wasted, that the class is not getting any place and become impatient and so, hurriedly accept assumptions, values, issues, and problems that are not part of the unit or are . . . of minor importance or irrelevant."

8. Eventually the unit will be sketched out in detail sufficient to have work begun upon it. Students will be ready to make choices of individual or small group assignments and all-class activities will have emerged. Such assignments should be agreed to and work begun without further ado. Important at this point would be the formation of a tentative time schedule for the work to be accomplished. Such a schedule should include the sequence of development of the study, the tentative assignment of reporting dates for committees, field trips, special events, class group work and study.

9. The students now proceed to go to work. Each knows what he is to do either individually or with his group. If a high quality of thorough work is not required of each student the value of the study will be lost and the teacher might as well revert to the old page-by-page assignment method. Students should be expected to be thorough, careful, and diligent and to make their reports (written or oral) meet high standards in content and composition.

10. There is a continuous flow from the preceding step (9) to this one:

work in class. Study and reports, field experiences and the use of resource people flow together as the unfolding plan requires. This is the crux of the study. What the students "get out of" the unit is determined by the quality of work reported back to the class for discussion and evaluation. "During this phase of the unit there will be much class discussion and many reports of progress of individuals and groups. *The teacher will need to plan with the class for sufficient all-group activities to protect the unit of the enterprise.*"

11. Plans are made for closing the unit. "As the solution of problems begins to take shape, statements are clarified, ideas are refined, and certain behavior changes appear, the teacher discerns that it is time to consider with the class the plan for closing the unit. A new period of planning begins and, as in the initiatory phase, it should be a teacher-class planning period. Evaluation, although a continuous process, is exceedingly important at this time for new students are in the stage of sizing up their own work and the work of other individuals, and groups, and of selecting the culminating activities."

12. "In order to make the learning experiences more effective and permanent, culminating and evaluating activities should be planned. The type of culmination should depend on the nature of the unit, the needs of the class, and the facilities and time for engaging in the activity. Worthwhile activities in bringing the unit to a close will give the students a sense of satisfaction and a feeling of completeness. Good culminating activities will provide further opportunities for the student to express himself through music, art, dramatics, writing, and other creative work of various types. . . .

"Culminating activities are of two kinds: one is the reporting, discussion, and arriving at group and individual attitudes, appreciations, and viewpoints in the classroom; the other one is the type of activity which calls for a reorganization of learning experiences around a central theme or several central but related themes."

Such activities "bring to a head" the preceding weeks of work.

13. A summary is made and conclusions are stated. It is frequently helpful and illuminating to bring together at the end of the study statements, oral or written, which describe the highlights of the work: conclusions reached, issues explored, significant knowledge acquired, experiences undertaken.

14. "A final evaluation period after the culminating activity is completed should round out the continuous evaluation that has occurred throughout the unit. . . ."[22]

[22] Much of this has been adapted from "Science—Servant or Master" and from "Developing a High School Core Program" by Lurry and E. J. Alberty.

With these steps in view the teacher and class can proceed to the development of units of work.[23] The possibilities for unit titles or themes are virtually unlimited. Literally scores of themes have been developed in schools committed to some form of integrating process within the curriculum, and, depending upon the nature of the theme and the imagination of teacher and students, health information may be acquired and health behavior developed from all of them. Among hundreds of available themes here are a dozen, in addition to the seven already presented, which are usable:

1. Healing Through the Ages
2. Contemporary Healing Systems
3. Superstitions and Fallacious Beliefs
4. Heredity as a Factor of Success
5. Home and Community Hazards to Life
6. A Farm
7. The Automobile Industry
8. The Vegetable Gardening and Distribution Industry
9. The Sea and Its Relation to Man
10. The Panama Canal: Its Building and Usage
11. Great Personalities in Science
12. The Control of Infective Organisms

Requisites of the Core Curriculum

To develop a core type of curriculum requires some variations and talent not always found in traditional subject-centered plans. In the first place time must be provided. "Core" is frequently scheduled two or three consecutive hours a day for at least four days a week. Core teachers need to be versatile, skilled in handling discussion, helpful in finding resources, and patient. The school library needs to be fairly well developed to supply the needs as the students run down the answers to problems developed within the unit. The faculty must be committed to the idea of allowing students to plan with them for the work to be covered. Individual and group guidance is an important aspect of core and teachers should be ready to spend time helping individuals or small groups with their quest. Evaluation is a constant process—the class will want to know from time to time of their progress and individual effort will need constant appraisal.

[23] For fuller discussion of techniques of unit construction with appropriate illustrations the reader is referred to the selected bibliography at the end of this chapter.

The Use of Resource People

One of the major requirements of successful core development is the availability *and use of* people other than the core teacher. He should not be expected to "go it alone." As Stratemeyer and others express it:

> A flexible but well planned pattern of experiences at the elementary school level allows for using specialists when needed. The entire class might seek help on an area of common concern, or a group might ask for special assistance during a laboratory period, or an individual might schedule time for rather extensive exploration. The proposed curriculum design makes many special demands on the time schedules of specialists, on systems of grouping learners, on the availability of materials. The entire school must be responsive to . . . the demands placed on personnel and resources.[24]

This is particularly important to personnel from the health sciences. Local physicians, dentists, public health workers, sanitarians, hospital administrators, people from voluntary health agencies, and many others are useful in supplying ideas, experiences, and information to core teachers either in building the resource unit or in the process of conducting the study unit itself.

Naturally, the school health educator is interested in the amount of understanding of health matters which can be developed from such integrating studies. As indicated earlier, the amount of material from hygiene and its related fields varies with the unit and with the teacher's skill and imagination. Teachers unprepared in health education will be less likely to give a full treatment to the possibilities for learning about health inherent in the unit. For that reason particularly many health educators prefer a separate course or a specific opportunity to teach health in order to cover the wide variety of informational needs exhibited by students at any age.

Where such integrated plans exist the health educator should:

1. Make available to core or area teachers suggestions for problems rich in health material.
2. Assist all area and core teachers with the discovery of resources for data on the problem.

[24] Florence B. Stratemeyer, Hamden L. Forkner, Margaret G. McKin, and A. Harry Passow, *Developing a Curriculum for Modern Living*, Second Edition, New York, Bureau of Publications, Teachers College, Columbia University, 1957, p. 355.

3. Suggest a wide variety of student activities of interest to the solution of the problem.
4. Arrange, if invited to do so, to bring resource people or paraphernalia to the school.
5. Be available himself for group leadership in the exploration of phases of the problem.
6. Assist when needed with the development of the unit.

Lurry and E. J. Alberty give some actual examples of the use of health education personnel for resource assistance in the development of learning units:

As learning units began to be developed by teachers and pupils, the health education staff was called on in various ways: to help teachers further with direction and materials, to participate in classroom discussions, to confer with committees of pupils, and to suggest other resource personnel and places. The following are illustrations:

1. A seventh-grade core group was concerned with studying personal-health status in connection with the Problem of Maintaining Body Efficiency. One member of the health education staff not only discussed types of health records with the pupils but demonstrated vision-screening before the class. This provoked so much interest that an eye model and other materials were taken into the class and the class itself was given a special session with vision-screening by the vision technician.

2. An eighth-grade core class was concerned with developing an understanding of growth problems and body changes in connection with the problem Understanding and Improving Myself. A member of the health education staff was invited by the pupil-program chairman to visit the class and to discuss questions that had been raised. The questions were listed in order of preference. A very spirited discussion resulted, particularly around the topic of Why Girls Mature Faster Than Boys.

3. A conference was held with an eleventh-grade core teacher in regard to direction and materials for health insurance plans for a class studying Purchasing Health under the problem of Marriage and Family Problems.

4. A committee of pupils from a senior high school studying community health organizations under the twelfth-grade problem area of Other Health Problems made an appointment with and visited the Health Education Office to discuss the School Health Program.

5. When diabetes screening took place in the secondary schools in the fall of 1954 one of the volunteer ladies doing the screening was asked to demonstrate the testing procedure to a class of seventh grade core pupils concerned with determining personal health status.

6. A teacher of a tenth-grade core class concerned with community health problems was interested in obtaining the help of resource personnel, particularly in regard to alcoholic addiction as a special community problem. She was referred to the very able director of the Section on Alcohol Studies of the State Health Department who had expressed a willingness to visit classes interested in discussing this topic.[25]

The health educator can be even more helpful if he prepares some written material for the core teacher. This might be in the form of problems to be studied, resources including bibliographies for both teacher and students, and suggestions for activities. The following shows how such resource material might be presented.

A. Material for a tenth-grade core class:

The tenth grade core group has selected a unit concerning: "Problems of Living in the Space Age." As a health education instructor I will take this opportunity to present to them some source material to aid them in the area of: "Problems of Health in the Space Age."

This resource material will be in the form of (1) suggested Problems; (2) resource Readings; (3) suggested Activities.

1. *Suggested Problems*
 a. How can the spread of disease be prevented with the greatly increased air travel?
 b. How can we bring about more health education here and abroad through clinics, lectures, films, public health services, etc.?
 c. What are some present international efforts to strike disease at its source?
 d. Discover how and why diseases spread to other populations and what are some of the possibilities for prevention of this danger?
 e. Study the costs in prevention and cure of disease on an international level.
 f. Why is education and immunization of air travelers, especially air pilots, so important?
 g. What effect will the air and space age have on the mental and emotional health of the people?
 h. What dangers await these space travelers in their journeys through the atmosphere?
2. *Suggested Readings*

 [Here would follow the several citations of the best, most authoritative books, pamphlets, or other written materials on health factors involved in the air and space age.]

[25] Lurry and Alberty, *op. cit*, pp. 246–247.

3. *Suggested Activities*
 a. Use a globe to locate existing airplane travel routes around the world. Point out the possibility that tsetse flies could be carried to South America or North America and that infested rat fleas could be brought from the Orient. Also point out where and why bubonic plague is a menace.
 b. Discover how lice are related to the transmission of typhus fever. Show how rapid air travel might be responsible for rapid spreading of the disease.
 c. Discover what precautions are used to prevent infested mosquitoes from traveling from one country to another in airplanes. Discover what diseases are carried by mosquitoes.
 d. Discover why pilots must have excellent muscular coordination.
 e. Discover why an efficient circulatory system is a requisite of a good pilot.
 f. Find out why an airplane pilot must have perfect vision and other sensory perceptions.
 g. Discuss the training program of an air cadet.
 (In these activities not only must the reading references be used but use must also be made of all the various community and even government sources of information.)[26]

B. This material was prepared for a core class studying the steel industry.

Some Questions Which Might Be Asked:

1. What are some diseases which are prevalent among steel workers?
2. What is the biggest cause of accidents in the steel industry?
3. Does the geographic location of most plants affect health?
4. What has been done by the steel industry to reduce hazards?
5. Is silicosis dangerous to the health?
6. What are some safety factors which will reduce the incidence of silicosis?
7. What are some of the main occupational hazards in the making of steel?
8. Has the government done anything toward improving the health of steel workers?
9. Is good medical supervision available to steel workers?
10. Does working under extreme heat affect the health?
11. Does the melting of steel and iron ore produce any toxic gases which might be bad for the health of the steel worker?

[26] Prepared by Phillip Hess from material developed by H. B. Alberty, 1951.

12. Is the wearing of safety clothing such as goggles, shoes, helmets, etc., required by the steel industry?
13. Do the steel companies have their own safety departments or does the government do all that sort of thing?

Some Films Which Might Be Useful:

1. *Occupational Hazards in U.S. Steel.* Available for free use by sending to the U.S. Steel Corporation Public Relations Department, Pittsburgh, Pennsylvania.
2. *Medical Care in Industrial Establishments.* Available for free use by writing to the National Safety Council, Park Avenue, New York, New York.
3. *Stop Silicosis.* Ohio State Department of Education Film Library, Columbus, Ohio. Free.
4. *Health and Recreation.* Ohio State Department of Education Film Library, Columbus, Ohio. Free.

Some Valuable References in Health in the Steel Industry:

1. Watkins, J. A., *Health Conservation in the Steel Mills,* U.S. Public Health Service, 1951.
2. U.S. Bureau of Steel, *Health and Safety of Steel Workers,* Washington, 1951.
3. *Industrial Health Series,* Metropolitan Life Insurance Co., New York, 1949.
4. Klemm, Margaret C., *Industrial Health and Medical Progress,* Public Health Service, Division of Industrial Hygiene, 1951.
5. *Industrial Hygiene for the Steel Mills,* U.S. Bureau of Mines, Washington, 1946.
6. *Occupational Hazards Eliminated,* Occupational Hazards, Inc., Cleveland, Ohio, 1950.[27]

Misconceptions

There are always misconceptions concerning any departure from the familiar and traditional, and the core, or integrated idea, has come in for its share. It is said, for example, that students plan only those experiences which suit their whim or fancy. This would not be true if a wise teacher participated in the planning group. The teacher does *not* renounce her privilege of guiding and participating in the planning.

It is said that the teacher does little to aid in the achievement of

[27] Prepared by Theodore Barclay, 1951.

learning and that when any advancement occurs it is largely by chance! This is not true. A well-conceived integrated plan *requires* the teacher to participate, pass on experience, assist in the location of resources. It is the difference between learning about health from someone who knows something about it and being taught by the humbug of television commercials.

Nor is it true that the "felt needs" of children are the only determining factors. We have discussed previously in Chapter 4 needs and "felt" needs and there is no reason to believe the integrated plan of curriculum development ignores the needs and demands of society as a whole.

Summary of Advantages

No advantages at all will develop from any plan of integration if students, teachers, and resource people fail to do a competent job. If, however, the participants are skilled and the core time is well spent, there are these potential advantages:

1. Students participate in planning, operation, and summing up, thereby making the core an integrating experience in itself.
2. Freeing students from the limits of a single textbook and broadening their use of other resources allows them to understand interrelationships among fields of knowledge.
3. Contact with resource experts is in itself broadening, less provincial than closed classroom experience.
4. The material studied more often than not is cohesive rather than fragmented, meaningful rather than boring, and related to on-going problems of emerging maturity.

INTEGRATING THE PROGRAM

If the extension of democracy is one of the goals of education, the school itself must be a democratic place in which to work and live. If health is a goal, all the influences within the school must lead toward the health of a child. Integrating the school health program means that all personnel, all programs of study, all environmental influences, all health activities performed contribute skillfully and in coordination to the best interests of the child. An integrated health program, then, is one in which the physicians, nurses, teachers, administrators, parents, and public all coordinate their efforts to secure effective results in stu-

dent health. None may retard the effort. All must agree on policy and program and then in cooperation and coordination work toward the common end. In the perfectly integrated health program there would be no safety hazards in the shop, no unguarded traffic corners, no unclean locker rooms, no neurotic teachers to influence susceptible youngsters, and no lack of nursing and medical service. There would be a well-developed disease control program. A group of stable and healthy teachers would be working with the students. The classrooms would be clean, well lighted, and ventilated. The school administration would be willing to invest intelligently in measures for the protection and development of the health of their students. A well-integrated program would involve everybody, and every influence within the entire school would have to measure up to a high standard in its effect upon the lives of children.

Requisites to Attainment

Such a completely developed program of integration requires four major developments, each related to and interdependent with the others:

1. A faculty of the school aware individually of problems involved in child growth and development, and sensitive enough to the importance of the welfare of children to be willing to conduct their program in relation to child health.
2. A program of instruction which provides knowledge and experience in healthful living.
3. A program of health activities and supervision aiming to do those things necessary to attain the objectives in child health agreed to by the faculty as they seek integration in the individual child.
4. A school-community relationship which (a) familiarizes the public with the health problems within the school, (b) develops effective teacher-parent relationships, (c) takes the children into the community for a study of health problems, and (d) utilizes to the fullest the professional health personnel of the community.

Administration

A program of this kind does not spring up overnight nor does it function without careful planning and determined effort. Many people are involved. Considerable work is entailed. Cross-purposes may de-

velop. The administrative direction needs to be firm, thoughtful, and persistent. The following administrative arrangements have been found desirable in the development of a completely integrated health program:

1. The establishment of a school-community health council.
2. The election of a chairman of the council who will serve as the operating agent in securing the effective development of a health program in the school.
3. The operation of a series of committees with faculty, student, and public personnel to study and analyze the health conditions and program and recommend improvements to appropriate authorities.
4. An effective program of environmental control so that traffic, ventilation, custodial service, sanitation, nutritional services, class schedules, play fields, and other elements influence favorably rather than unfavorably the health of students.
5. Employment where possible of physicians, nurses, psychiatrists, dentists, and other specialized personnel to make their necessary contributions to the development of the child as described in the objectives.
6. A program of physical education based upon individual differences and providing a program not only for the normal or typical child but also for the handicapped and atypical.
7. The installation of modern, sanitary, scientific, and useful school equipment in classrooms, laboratories, and offices.[28]

It is evident that a fully developed, well-integrated school health program is a complex thing. Many persons are included and they must work harmoniously toward a common end. Many things need to be done. Many functions beyond the traditional classroom procedures must be instituted. The entire school atmosphere must be charged with the importance of attaining the agreed-upon objectives for each individual child. The concept of integration applied to health education is the most promising of the three existing patterns—direct teaching, correlation, and integration—from the standpoint of getting the complete job done. Only with integrated instruction and integrated programs can good health permeate the program entirely. Children can reap the best

[28] See Chapter 16 for an extended discussion of the organization and functions of such a council.

harvest from their educational opportunities only when every phase and facet of their educational experience contributes to and none detracts from their best interests. Personnel, curriculum, administration, buildings, atmosphere, color, field experience, *everything in the school environment* must fit together to the end that the student emerges as well-integrated as individual as the influence of the school can make possible.

CONCLUSION

"Integration," thus applied, becomes a process as well as a state. It is a means of organizing learning. It is a means of bringing some of the great lessons of science and health into the consciousness and behavior of growing students. It is not a "cause," something to be "for or against," or to be "believed in." It is not restricted to uses in "progressive schools" alone. It is used in some very "traditional" schools quite within the boundaries of a subject curriculum. It is a method of accomplishing learning.

SELECTED READINGS

The readings on integration are extensive. The following are a few selected to aid the student grasp the possibilities involved for health education.

Alberty, Harold B., *Reorganizing the High School Curriculum,* Revised Edition, New York, Macmillan, 1953.

Association for Supervision and Curriculum Development, Committee on Preparation of Core Teachers, *Preparation of Core Teachers for Secondary Schools,* Washington, National Education Association, 1955.

Babson, Helen, "The Place of the Core in the Curriculum," *Curriculum Journal,* November, 1940, pp. 317–320.

Bishop, L. J., "Planning Patterns in a Core Program," *Educational Leadership,* XII (April, 1955), 407–410.

Cassidy, Rosalind, "The Concept of Integration as It Functions in Health Education," *Journal of Health and Physical Education,* May, 1941, p. 306.

Chatto, Clarence I., and Halligan, Alice L., *The Story of the Springfield Plan,* New York, Barnes and Noble, 1945.

Donovan, John C., "Citizenship Laboratory at Bates College," *School and Society,* LXXXIII (February 18, 1956), 61–62.

Faunce, Roland C., and Bossing, Nelson L., *Developing the Core Curriculum,* Englewood Cliffs, N.J., Prentice-Hall, 1951.

Hamilton, Thomas H., "A Step Toward Integration," *Journal of Higher Education,* XXVI (May, 1955), 270–271.

Hand, Harold C., "The Case of the Common Learnings Course," *Science Education,* February, 1948, pp. 5–11.

Lurry, Lucile L., "Core-Program Development Through Action Research," *School Review,* LXIII (December, 1955), 469–476.

Lurry, Lucile L., and Alberty, Elsie J., *Developing a High School Core Program,* New York, Macmillan, 1957.

Martin, William Oliver, *The Order and Integration of Knowledge,* Ann Arbor, Mich., University of Michigan Press, 1957.

Miel, Alice, and Brogan, Peggy, *More Than Social Studies,* Englewood Cliffs, N.J., Prentice-Hall, 1957.

National Society for the Study of Education, *Integration of Educational Experiences,* Fifty-Seventh Yearbook of the Society, Part III, Chicago, distributed by the University of Chicago Press, 1958.

Organ, Troy W., "Integration in Higher Education," *Journal of Higher Education,* XXVI (April, 1955), 180–186.

Prescott, Daniel A., *The Child in the Educative Process,* New York, McGraw-Hill, 1957.

Rosenberger, H. T., "Core Curriculum," *National Association of Secondary School Principals Bulletin,* XL (February, 1956), 110–114.

Tyler, Ralph W., "The Core Curriculum," *National Education Association Journal,* XLII (December, 1953), p. 563.

Wile, Ira S., "Integration of the Child," *Mental Hygiene,* April, 1936, p. 249.

— 8 —

Teacher Preparation and Resources

Until very recently colleges and universities have made no effort to provide curriculums for the preparation of health education teachers. For years the personnel has come from other fields, principally physical education, nursing, home economics, and the biological sciences. Historically, and mainly in colleges, the teachers of health have been physicians. Two developments in recent years indicate, however, that in the future a health education teacher may have the adequate preparation the area deserves: (1) The four- and five-year curriculums for preparing physical education teachers are being materially strengthened in school health education, and (2) major curriculums are being developed specifically for the purpose of preparing teachers in school and public health education.

To teach successfully in health education, one needs to know a great deal. It is not unreasonable to point out that preparation in physical education per se, or nursing, or medicine, or home economics, does *not* equip one well to serve in a health instruction capacity. That is, there is no reason to believe that such specialized training and nothing else will suffice. Something more is needed before one can competently undertake to construct and use a course of study in school health instruction. This additional preparation could well consist of four areas of study:

1. *The philosophy, principles, techniques, and evaluating procedures of modern education.* Not just anyone can successfully teach any more than just anyone can practice medicine or nursing. Preparation is necessary, techniques must be practiced, knowledge must be acquired. A point of view and philosophy need to be developed. Thus, anyone

who teaches must be familiar with the professional aspects of education itself.

2. *Health.* A preprofessional understanding of anatomy and physiology as may have been learned in undergraduate days is helpful and basic, but insufficient to enable the teacher to meet the many demands of modern health teaching. Preparation of a thorough sort must be had in personal health and in general and community health.

3. *Special areas.* Because much of the interesting and absorbing part of any course or course of study will deal with problems involved in immunology, sex, reproduction and marriage, nutrition, genetics, mental health, and child development, the teacher should be especially well prepared in these areas. Not only should collegiate courses be undertaken in each of these spheres but the teacher-on-the-job should constantly read scientific material in these areas in order to keep up to date.

4. *Personnel and guidance.* Because school health instruction is such a personal matter, because it so frequently concerns individual and highly personal problems, the teacher must be prepared to deal personally with students. They will come to him for all sorts of advice They will seek counsel for their difficulties. It must be clear that the teacher is in no sense a physician (unless of course he is, in fact, by training) and must not pose as one in any way. He will, however, have many opportunities to give help in organizing the personal regimen of his students and will need to have many resources ready to use in his referral and guidance work.

These are the four principal areas in which teachers need to be prepared when entering school health education from other fields. The curriculum which prepares directly for health education will undoubtedly contain adequate preparation in the physical and biological sciences, the social sciences, psychology, education, and principles and techniques of school and public health education. These areas studied in relation to thorough preparation in the many aspects of health education should provide one with sufficient background to undertake teaching.

The Elementary Teacher

For the elementary teacher who must know many things about many fields we have attempted, in the bibliographies which follow, to indicate those resources which would be most helpful. *These are marked*

with an asterisk. Some preparation in health education should have been provided in college as part of the certification requirements. Basic preparation in personal health problems, a thorough grounding in child growth and development, basic material in child psychology and mental health, as well as some experience with the elements of a child health education program would be considered basic preparation. In addition, to participate intelligently in a school health education program, elementary teachers should, as others do, undertake a program of in-service preparation as is described in the following section.

IN-SERVICE PREPARATION

There is no field which exceeds school health education in its demand upon the teacher to keep up to date. To interpret to students the findings from fast-moving science alone requires constant study of scientific literature, constant attendance at professional meetings. To dispel the folklore and tradition, to eliminate the superstition and quackery, to answer the many simple daily questions related to healthful living requires constant and discriminating reading of professional materials. To know truth from fiction, fact from fancy requires the development of a sense of discrimination which can only be cultivated by a liberal and persistent reading of the literature from the scientific fields.

The health education teacher in service could well follow a program of self-improvement involving something of *all* the following suggestions:

1. Acquisition of a professional library of standard works in health and its special fields. The bibliography on page 236 makes specific suggestions for such books.
2. Subscription to professional journals. From three to five weekly or monthly magazines are virtually indispensable to a teacher in health education. Articles on recent discoveries, new points of view, experiences of others are needed in the modern classroom. The bibliography has several suggestions in this category.
3. Attendance at lectures, institutes, conferences, workshops, and other such special events.
4. Graduate university training. It can well be recommended that teachers should return to the campus periodically for additional courses, perhaps in areas not previously explored, perhaps to acquire new

information in familiar areas. Such study is highly profitable particularly in some of the special areas of school health education in which general courses have not given full treatment.

There is, of course, no substitute for personal interest and zeal for self-improvement. Health instruction is a live, vibrant field, deserving imaginative and enthusiastic teachers. It can be ruined by teachers who are still dispensing information a half-century old or whose conception of teaching is to have the students memorize the enzymes in the alimentary canal. It can be absorbing, however, if the teacher is alert to modern problems, is scientific in his hygiene and contemporary in his educational point of view, and is willing to keep himself abreast of the times by diligent and constant application to the best reading of the day.

SELECTED RESOURCES FOR TEACHERS AND OTHERS

The literature and other resource material related to health education is more than ample. No one need lack for assistance in the process of solving an organizational problem, understanding personal health, or finding the most recent scientific word on a special subject. Skill in the use of the library with its various listings will assure assistance on such problems because writers in health education have been prolific.

The following have been chosen from many items as being of known aid to health education personnel who seek to improve their teaching or administrative functions.

Personal and Public Health

Atkinson, Donald Taylor, *Magic, Myth and Medicine,* New York, Premier Books, Fawcett, 1956.

Baron, Abraham Louis, *Man Against Germs,* New York, Dutton, 1957.

Birkeland, J. M., *Microbiology and Man,* Second Edition, New York, Williams & Wilkins, 1949.

*Byrd, Oliver E., *Health Instruction Yearbook,* Stanford, Stanford University Press, annual.

*Byrd, Oliver E., *School Health Sourcebook,* Palo Alto, Stanford University Press, 1955.

Calder, Richie, *Medicine and Man,* New York, New American Library of World Literature, 1958.

Carlson, Anton J., and Johnson, Victor, *Machinery of the Body,* Fourth Edition, Chicago, University of Chicago Press, 1953.

Clark, Randolph L., and Cumley, Russell W., *The Book of Health*, Third Edition, Houston, Tex., Elsevier Press, 1953.

Dorland, W. A. Newman, *Medical Dictionary*, Twenty-third Edition, Philadelphia, Saunders, 1957.

Dublin, Louis, *The Facts of Life from Birth to Death*, New York, Macmillan, 1951.

Erskine, Earl B., *Hygiene and Public Health*, Englewood Cliffs, N.J., Prentice-Hall, 1949.

Franz, Alexander, *Psychosomatic Medicine, Its Principles and Applications*, New York, Norton, 1950.

Gardner, Martin, *In the Name of Science*, Revised Edition, New York, Putnam, 1957.

*Health Information Foundation, *An Inventory of Social and Economic Research in Health*, New York, 1952.

Kohler, Fred, *Evolution and Human Destiny*, New York, Philosophical Library, 1952.

LaBarre, Weston, *The Human Animal*, Chicago, University of Chicago Press, 1955.

Lawton, George, *Straight to The Heart*, New York, International Universities, 1957.

Maxcy, Kenneth F., *Rosenau's Preventive Medicine and Public Health*, Eighth Edition, New York, Appleton-Century-Crofts, 1956.

Montagu, Ashley, *On Being Intelligent*, New York, Schuman, 1951.

National Association of Secondary-Schools Principals, "What We Know About Fitness," *The Bulletin of the Association*, XL, No. 218 (March, 1956), 30.

National Health Education Committee, "Facts on the Major Killing and Crippling Diseases in the United States Today," *Annual Report of the Committee*, New York, 1959.

New York Academy of Sciences, "Natural Resistance to Infections," *Annals of the Academy*, LXVI, Art. 2, 1956.

Scheinfeld, Amram, *You and Heredity*, Philadelphia, Lippincott, 1950.

Sigerist, Henry E., *Landmarks in the History of Hygiene*, New York, Oxford University Press, 1956.

Solomon, Cyril, M.D., and Roberts, Brooks, Editors, *How to Enjoy Good Health*, New York, Random House, 1956.

Textbooks for School and College

There are some excellent health readers for primary and elementary grades as well as textbooks appropriate for secondary and collegiate educa-

* Indicates the resources which will be most helpful for the elementary teacher.

tion. The list of titles would be too long to publish here, but the following publishers are known to have books available. Inquiry should be made directly to them for catalogues and descriptive material.

American Book Company, 55 Fifth Avenue, New York 3, N.Y.
Beckley-Cardy Co., 1900 N. Narragansett, Chicago 39, Ill.
Economy Company, 529 N. Capitol Avenue, Indianapolis, Ind.
Ginn and Company, Statler Building, Boston, Mass.
Harcourt Brace, 383 Madison Avenue, New York, N.Y.
Harper & Brothers, 49 East 33 Street, New York 16, N.Y.
Heath, D. C., Company, 285 Columbus Avenue, Boston, Mass.
Houghton Mifflin Company, 2 Park Street, Boston, Mass.
Laidlow Brothers, 328 Jefferson Street, Chicago 6, Ill.
Lippincott, J. B., Company, E. Washington Square, Philadelphia, Pa.
Lyons and Camalian, 2500 Prairie Avenue, Chicago 16, Ill.
McGraw-Hill Book Company, 330 West 42 Street, New York, N.Y.
Mosby, C. V., and Company, 3207 Washington Boulevard, St. Louis, Mo.
National Health Education Committee, 405 Lexington Avenue, New York, N.Y.
Prentice-Hall, Inc., Englewood Cliffs, N.J.
Saunders, W. B., Company, 218 W. Washington Square, Philadelphia, Pa.
Science Research Associates, 57 W. Grand Avenue, Chicago, Ill.
Scott, Foresman & Company, 443 E. Erie Street, Chicago, Ill.
Van Nostrand, D., Company, Inc., 120 Alexander Street, Princeton, N.J.
Wiley, John, and Sons, Inc., 440 Fourth Avenue, New York 16, N.Y.
Winston, John C., Company, 1010 Arch Street, Philadelphia 7, Pa.

School Health Education Program

American Association for Health, Physical Education and Recreation, *Fit to Teach,* Washington, D.C., 1957.

American Public Health Association, "Health Programs for Secondary Schools," Report of Committee on School Health, *Bulletin of the National Association of Secondary-School Principals,* XLI (1957), 92–106.

American Public Health Association, *Services for Handicapped Children,* Committee on Child Health, New York, 1955.

American School Health Association, "Recommended Preparation for School Health Personnel in the United States," Committee on Professional Preparation in Health Education, Dora Hicks, Chairman, *Journal of School Health,* XXVII, No. 8 (October, 1957), 215.

* Anderson, C. L., *School Health Practice,* St. Louis, Mosby, 1960.

Brownell, Clifford Lee, *Principles of Health Education Applied,* New York, McGraw-Hill, 1949

*Grout, Ruth E., *Health Teaching in Schools,* Third Edition, Philadelphia, Saunders, 1958.

Haag, Jessie Helen, *School Health Program,* New York, Holt, 1958.

Harnett, Arthur B., and Shaw, John B., *Education for Healthful Living,* New York, Appleton-Century-Crofts, 1959.

Irwin, Leslie W., "Basic Needs in Health Education," *Journal of Education,* 141, No. 4 (April, 1959).

* Irwin, Leslie W., Humphrey, James H., and Johnson, Warren R., *Methods and Materials in School Health Education,* St. Louis, Mosby, 1956.

*National Committee on School Health Policies of the National Conference for Cooperation in Health Education, *Suggested School Health Policies,* Third Edition, Washington, D.C., National Education Association, 1956.

*National Education Association and The American Medical Association, The Joint Committee on Health Problems in Education, *School Health Services,* 1953; *Healthful School Living,* 1957; *Health Education,* 1960; Washington, D.C.

Salvato, Joseph A., Jr., *Environmental Sanitation,* New York, Wiley, 1958.

*Schneider, Robert E., *Methods and Materials in Health Education,* Philadelphia, Saunders, 1958.

Schwebel, Milton, and Harris, Ella, *Health Counseling,* New York, Chartwell House, 1951.

*Smith, Helen Norman, and Wolverton, Mary B., *Health Education in the Elementary School,* New York, Ronald Press, 1959.

*Turner, C. E., *School Health and Health Education,* Third Edition, St. Louis, Mosby, 1957.

*Wheatley, George M., and Hallock, Grace T., *Health Observation of School Children,* Second Edition, New York, McGraw-Hill, 1956.

Community Health Organization

Brockington, Fraser, *World Health,* Baltimore, Penguin, 1959.

Buell, Bradley, and associates, *Community Planning for Human Services,* New York, Columbia University Press, 1952.

Carins, H. M., *National Health Agencies,* Washington, D.C., Public Affairs Press, 1945.

Ginsburg, Ethel L., *Public Health Is People,* New York, Commonwealth Fund, 1950.

Goodman, Neville M., *International Health Organizations and Their Work,* Philadelphia, Blakiston, 1952.

Gunn, S. M., and Platt, P. S., *Voluntary Health Agencies,* New York, Ronald Press, 1945.

Hanlon, John J., *Principles of Public Health Administration,* St. Louis, Mosby, 1956.

Hiscock, Ira V., *Community Health Organization,* Fourth Edition, New York, Commonwealth Fund, 1950.

International Cooperation Administration, *Technical Cooperation In Health,* Washington, D.C., Office of Public Reports, I.C.A., 1956.

Kleinschmidt, H. E., and Zimand, Savel, *Public Health Education: Its Tools and Procedures,* New York, Macmillan, 1953.

Leff, S., and Leff, Vera, *From Witchcraft to World Health,* New York, Macmillan, 1957.

Paterson, Robert G., *Foundations of Community Health Education,* New York, McGraw-Hill, 1950.

Patterson, Raymond S., and Roberts, Beryl J., *Community Health Education in Action,* St. Louis, Mosby, 1951.

Smiley, Dean Franklin, and Gould, Adrian Gordon, *Your Community's Health,* Revision of *Community Hygiene,* New York, Macmillan, 1952.

Smillie, Wilson G., *Public Health Administration in the United States,* Third Edition, New York, Macmillan, 1947.

Warren, Roland L., *Studying Your Community,* New York, Russell Sage Foundation, 1955.

World Health Organization Technical Report Series No. 89, *Expert Committee on Health Education of the Public,* New York, Columbia University Press, 1954.

PERIODICALS FOR PERSONAL USE OR FOR THE SCHOOL LIBRARY

American Journal of Hygiene, Johns Hopkins Press, Baltimore 18, Md.

American Journal of Nursing, American Nurses Association, 50 West 50 Street, New York, N.Y.

American Journal of Public Health, 1790 Broadway, New York 19, N.Y.

Channels, National Publicity Council for Health and Welfare Services, Inc., 257 Fourth Avenue, New York, N.Y.

**The Child,* U.S. Department of Health, Education, and Welfare, Children's Bureau, Washington 25, D.C.

**Child Development,* Society for Research in Child Development, National Research Council, 1341 Euclid, Champaign, Ill.

**Child Study,* Child Study Association of America, 132 East 74 Street, New York, N.Y.

**Childhood Education,* Association for Childhood Education, International, 1200 Fifteenth Street N.W., Washington, D.C.

Health Articles of the Week, The National Health Council, 1790 Broadway, New York, N.Y.

**Health Bulletin for Teachers,* Metropolitan Life Insurance Co., Health and Welfare Division, 1 Madison Avenue, New York, N.Y.

Health Education Journal, Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C. 1, England.

International Journal of Health Education, International Union for Health Education of the Public, 3 rue Viollier, Geneva, Switzerland.

Journal of the American Dental Association, The American Dental Association, 222 E. Superior Street, Chicago, Ill.

Journal of the American Medical Association, 535 N. Dearborn Street, Chicago, Ill.

Journal of Exceptional Children, International Council for Exceptional Children, Saranac, Michigan, Michigan State Normal College, Ypsilanti, Mich.

Journal of Health, Physical Education, and Recreation, American Association for Health, Physical Education, and Recreation, 1201 Sixteenth Street N.W., Washington, D.C.

**Journal of the National Education Association,* The National Education Association, 1201 Sixteenth Street N.W., Washington, D.C.

Journal of Social Hygiene, American Social Hygiene Association, 1790 Broadway, New York 19, N.Y.

**Journal of School Health,* American School Health Association, Kent, Ohio.

Marriage and Family Living, National Council on Family Relations, 5757 S. Drefer Avenue, Chicago 37, Ill.

Mental Hygiene, National Association for Mental Hygiene, 1790 Broadway, New York, N.Y.

National Parent-Teacher Magazine, National Congress of Parents and Teachers, 600 S. Michigan Boulevard, Chicago, Ill.

National Safety News, National Safety Council, 425 N. Michigan Avenue, Chicago, Ill.

Nutrition Reviews, The Nutrition Foundation, Inc., Chrysler Building, New York 17, N.Y.

Public Health Nursing, National Organization of Public Health Nursing, 1790 Broadway, New York, N.Y.

Public Health Reports, U.S. Public Health Service, Nineteenth Street and Constitution Avenue N.W., Washington, D.C.

Public Safety, National Safety Council, 425 N. Michigan Avenue, Chicago, Ill.

Quarterly Journal of Studies on Alcohol, Journal of Studies on Alcohol, Inc., 52 Hillhouse Avenue, New Haven, Conn.

Safety Education, National Safety Council, 425 N. Michigan Avenue, Chicago, Ill.

* *Today's Health,* American Medical Association, 535 N. Dearborn Street, Chicago 10, Ill.

**Understanding Your Child,* The National Committee for Mental Hygiene, Inc., 1790 Broadway, New York, N.Y.

World Health, Pan American Sanitary Bureau, Regional Office of the World Health Organization, 1501 New Hampshire Avenue N.W., Washington 6, D.C.

Teaching Aids, Bibliographies, Materials

Teachers seeking classroom aids, such as films, tapes, pamphlets, display material, and others, should inquire of their own State Departments of Public Instruction and of Health. These organizations frequently have catalogues showing available material and have a rental service for schools. Local voluntary health agencies likewise provide such service, much of it free of charge. Colleges and universities very frequently have teaching aid services for schools in their vicinity.

Here follows a listing of other resources in the form of books and listings which are self-explanatory:

Abbott, Waldo, and Rider, Richard L., *Handbook of Broadcasting,* Fourth Edition, New York, McGraw-Hill, 1957.

Allison, Mary L., *et al., Manual for Evaluators of Film and Filmstrips,* New York, UNESCO Publications Office, 801 Third Avenue, 1956.

* American Association of School Administrators, *Choosing Free Materials for Use in the Schools,* Washington, D.C., National Education Association, 1201 Sixteenth Street N.W., 1955.

Association for Education by Radio and Television and Kent State University, *National Tape Recording Catalog,* Second Edition, Washington, D.C., Department of Audio-Visual Instruction, N.E.A., 1201 Sixteenth Street N.W., 1957.

Barnouw, Erik, *Mass Communication—Television, Radio, Film, Press,* New York, Rinehart, 1956.

Dale, Edgar, *Audio-Visual Methods in Teaching,* Revised Edition, New York, Dryden, 1954.

Dale, Edgar, Schramm, Wilbur, Tyler, I. Keith, and Witty, Paul, "Mass Media in Education," *Fifty-Third Yearbook of the National Society for the Study of Education, Part III,* Chicago, University of Chicago Press, 1954.

*Damron, C. Frazier, and Boyd, Clifford A., "Improving the Elementary School Health Program Through the Use of Free Resource Materials," *Journal of School Health,* XXVII, No. 1 (January, 1957), 26.

DeKieffer, Robert, and Cochran, Lee W., *Manual of Audio-Visual Techniques,* Englewood Cliffs, N.J., Prentice-Hall, 1955.

Dennoyer-Geppert Company, *Toward Better Understanding of Maps, Globes, Charts,* Chicago, 1955.

Dent, Charles H., Tiemann, T., and Holland, Nancy M., *Feltboards for Teaching,* The Visual Instruction Bureau, Extension Division, University of Texas, 1955.

East, Marjorie, *Display for Learning: Making and Using Visual Materials,* New York, Dryden, 1952.

Educational Film Library Association, *E.F.L.A. Publications,* New York, The Association, 345 East 46 Street, 1955.

Educational Policies Commission, *Mass Communication and Education,* Washington 6, D.C., National Education Association and the American Association of School Administrators, 1201 Sixteenth Street N.W., 1958.

Educational Screen, *The Blue Book of Audio-Visual Materials,* Chicago, 64 E. Lake Street, 1954.

Educational Services, *Listing of Educational Recordings and Filmstrips for More Effective Learning,* Washington, D.C., 1730 I Street N.W., 1954–1955.

*Film Council of America, *Guide to Film Services of National Associations,* Evanston, Ill., The Council, 600 Davis Street, 1954.

Findly, Elizabeth, *Bibliography of Bibliographies of Instructional Aids to Learning,* Eugene, Ore., University of Oregon, School of Education, 1955.

Finn, James D., *Audio-Visual Equipment Manual,* New York, Dryden, 1957.

Hall, Roger S., *Taking Hold on Television,* New York, National Publicity Council for Health and Welfare Services, 257 Fourth Avenue, 1954.

Horkheimer, Mary F., and Diflor, John W., *Educator's Guide to Free Slidefilms,* Eighth Edition, Randolph, Wis., Educators Progress Service, 1956.

*Horkheimer, Patricia, Cody, Paul T., and Fowlkes, John G., "Elementary Teachers Guide to Free Curriculum Materials," *Educational Research Bulletin,* Randolph, Wis., Educators Progress Service, May 11, 1955.

Kendig, Kathryn Dye, and Martin, Gaither Lee, *The ABC's of TV,* San Jose, Calif., Spartan Bookstore, San Jose State College, 1957.

Kinney, Lucien, and Dresden, Katherine, *Better Learning Through Current Materials,* Revised Edition, Stanford, Calif., Stanford University Press, 1952.

Kleinschmidt, H. M., M.D., *How to Turn Ideas Into Pictures,* New York, National Publicity Council for Health and Welfare Services, 257 Fourth Avenue, 1950.

Levenson, William B., and Stasheff, Edward, *Teaching Through Radio and Television,* Revised Edition, New York, Rinehart, 1952.

McCluskey, F. Dean, *The Audio-Visual Bibliography,* Dubuque, Ia., William C. Brown Co., 1955.

Mental Health Film Board, Inc., 166 East 38 Street, New York 16, N.Y.

Miller, Bruce, *Bulletin Boards: High, Wide and Handsome,* Riverside, Calif., the author, Box 369, 1957.

Modley, Rudolph, and Lowenstein, Dyno, *Pictographs and Graphs,* New York, Harper, 1952.

National Audio-Visual Association, Inc., *The Audio-Visual Equipment Directory,* Fourth Edition, Fairfax, Va., 1958.

National Publicity Council for Health and Welfare Servcies, "How to Find What Health Education Materials You're Looking For," *American Journal of Public Health and the Nation's Health,* XLVI, No. 11 (November, 1956), 1460.

National Education Association, *Audio-Visual Communication Review,* Washington 6, D.C., Department of Audio-Visual Instruction, 1201 Sixteenth Street N.W.

National Education Association, *Audio-Visual Instruction,* Washington 6, D.C., Department of Audio-Visual Instruction, 1201 Sixteenth Street N.W.

Nichols, Ralph G., and Stevens, Leonard, *Are You Listening?* New York, McGraw-Hill, 1958.

Nichtenhauser, Adolf, Coleman, Marie L., and Ruhe, D. S., *Films in Psychiatry, Psychology and Mental Health,* New York, Health Education Council, 1953.

Ohio State University, *How to Keep Your Bulletin Board Alive,* Columbus, Ohio, Bureau of Educational Research and Service, 1958.

Osborn, Merton B., *The Flannel Board,* Redlands, Calif., the author, 1956.

Physical Educator, *A Classified List of Current Periodicals in the Fields of Athletics, Health, Physical Education and Sports Published in the United States and Canada,* XIII, No. 2 (May, 1956), 54.

Salisbury, Gordon, and Sheridan, Robert, *Catalog of Free Teaching Aids,* Riverside, Calif., P.O. Box 943, 1953.

Sands, Lester B., *Audio-Visual Procedures in Teaching,* New York, Ronald Press, 1956.

Suttles, Patricia H., *Elementary Teachers Guide to Free Curriculum Materials,* Randolph, Wis., Educators Progress Service, 1956.

Teaching Tools, Los Angeles 38, Calif., Ver Halen Publishing Co., 6327 Santa Monica Boulevard.

United States Office of Education, *Teaching with Radio, Audio, Recording and Television Equipment,* School Equipment Committee of Radio-Television Manufacturers Association, Washington, D.C., 1953.

*Westcott, Howard E., *A Guide to Teaching Materials in Elementary Health Education,* San Francisco, Howard Chandler, 1959.

Williams, Catherine M., *Sources of Teaching Materials,* Teaching Aids Laboratory Pamphlet No. 1, Columbus, Ohio, Bureau of Educational Research and Service, The Ohio State University, 1958.

Wittich, Walter A., and Schuller, Charles F., *Audio-Visual Materials: Their Nature and Use,* Second Edition, New York, Harper, 1957.

Wittich, Walter A., and Halsted, Gertie H., *Educator's Guide to Free Tapes, Scripts, and Transcripts,* Fourth Annual Edition, Randolph, Wis., Educators Progress Service, 1958.

Woelfel, Norman, *How to Reach Your Teaching Goals with Teaching Aids,* Teaching Aids Laboratory Pamphlet No. 2, Columbus, Ohio, Bureau of Educational Research and Service, The Ohio State University, 1955.

World Health Organization, *Health Education,* United Nations Educational, Scientific and Cultural Organization (UNESCO), 1956.

Official and Voluntary Agencies

Most of the following agencies publish catalogues or listings of educational material which they are glad to send to teachers needing material in their field. The material itself is usually free or inexpensive. In many instances such as the larger voluntary health agencies, there are state and sometimes local chapters from whom help may be had direct.

Alcoholics Anonymous, P.O. Box 459, Grand Central Annex, New York 17, N.Y.

American Academy of Pediatrics, 636 Church Street, Evanston, Ill.

American Association for Health, Physical Education, and Recreation, 1201 Sixteenth Street N.W., Washington, D.C.

American Automobile Association, Pennsylvania Avenue at Seventeenth Street N.W., Washington, D.C.

American Cancer Society, 521 West 57 Street, New York, N.Y.

American Council on Education, 1785 Massachusetts Avenue N.W., Washington, D.C.

American Diabetes Association, 1 East 45 Street, New York 17, N.Y.

American Dietetic Association, 620 North Michigan Avenue, Chicago 11, Ill.

American Dental Association, 222 E. Superior Street, Chicago, Ill.

American Eugenics Society, Inc., 230 Park Avenue, New York, N.Y.

American Foundation for the Blind, 15 West 16 Street, New York, N.Y.

American Hearing Society, 817 Fourteenth Street N.W., Washington, D.C.

American Heart Association, 44 East 23 Street, New York 10, N.Y.

American Home Economics Association, 1600 Twentieth Street N.W., Washington, D.C.

American Hospital Association, 18 E. Division Street, Chicago 10, Ill.

American Legion (National Child Welfare Division), 777 N. Meridian Street, Indianapolis, Ind.

American Medical Association, 535 N. Dearborn Street, Chicago, Ill.

American Nurses Association, 2 Park Avenue, New York, N.Y.

American Optometric Association, Inc., 4030 Chouteau Avenue, St. Louis, Mo.

American Public Health Association, 1790 Broadway, New York, N.Y.
American Red Cross, Eighteenth and E Streets, Washington, D.C.
American School Health Association, 3335 Main Street, Buffalo, N.Y.
American Social Hygiene Association, 1790 Broadway, New York, N.Y.
Arthritis and Rheumatism Foundation, 23 West 45 Street, New York 36, N.Y.
Association for Family Living, 28 E. Jackson Boulevard, Chicago 4, Ill.
Association for Childhood Education International, 1200 Fifteenth Street N.W., Washington, D.C.
Athletic Institute, 209 S. State Street, Chicago, Ill.
Association Press, 347 Madison Avenue, New York, N.Y.
Center for Safety Education, New York University, Washington Square, New York 3, N.Y.
Child Study Association of America, 132 East 74 Street, New York, N.Y.
Child Welfare League of America, 130 East 22 Street, New York, N.Y.
Cleveland Health Museum, 8911 Euclid Avenue, Cleveland 6, Ohio
Common Cold Foundation, 370 Lexington Avenue, New York 17, N.Y.
Commonwealth Fund, 41 East 57 Street, New York 22, N.Y.
Consumers' Research, Inc., Consumers' Road, Washington, N.J.
Consumers Union, Mount Vernon, N.Y.
Health Information Foundation, 420 Lexington Avenue, New York 17, N.Y.
International Council for Exceptional Children, 1201 Sixteenth Street N.W., Washington 6, D.C.
Iowa Child Welfare Research Station, State University of Iowa, Department of Publications, Iowa City, Ia.
Mental Health Materials Center, 1790 Broadway, New York 19, N.Y.
Muscular Dystrophy Associations of America, Inc., 1790 Broadway, New York 6, N.Y.
National Association for Mental Health, 10 Columbus Circle, New York 19, N.Y.
National Association for Retarded Children, 99 University Place, New York 3, N.Y.
National Committee for Mental Hygiene, 1790 Broadway, New York, N.Y.
National Committee on Alcoholism, 2 East 103 Street, New York 29, N.Y.
National Commission on Safety Education, 1201 Sixteenth Street N.W., Washington 6, D.C.
National Congress of Parents and Teachers, 700 N. Rush Street, Chicago, Ill.
National Council on Family Relations, 5457 S. Drefer Avenue, Chicago 37, Ill.
National Education Association, 1201 Sixteenth Street N.W., Washington 6, D.C.

National Epilepsy League, Inc., 130 N. Wells Street, Chicago 6, Ill.
National Foundation, 800 Second Avenue, New York, N.Y.
National Health Council, 1790 Broadway, New York, N.Y.
National Institute of Mental Health, Bethesda 14, Md.
National Multiple Sclerosis Society, 270 Park Avenue, New York, N.Y.
National Organization for Public Health Nursing, Inc., 1790 Broadway, New York, N.Y.
National Recreation Association, 8 West 8 Street, New York, N.Y.
National Safety Council, 425 N. Michigan Avenue, Chicago, Ill.
National Society for Crippled Children and Adults, 11 S. LaSalle Street, Chicago, Ill.
National Society for the Prevention of Blindness, 1790 Broadway, New York, N.Y.
National Tuberculosis Association, 1790 Broadway, New York, N.Y.
Planned Parenthood Federation of America, Inc., 501 Madison Avenue, New York, N.Y.
Public Affairs Committee, Inc., 22 East 38 Street, New York, N.Y.
Russell Sage Foundation, 505 Park Avenue, New York 22, N.Y.
Science Research Associates, 57 W. Grand Avenue, Chicago 10, Ill.
Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.
United Cerebral Palsy Associations, 369 Lexington Avenue, New York, N.Y.
U.S. Children's Bureau, Department of Health, Education, and Welfare, Washington, D.C.
U.S. Department of Agriculture, Washington, D.C.
U.S. Office of Education, Department of Health, Education, and Welfare, Washington, D.C.
U.S. Public Health Service, Department of Health, Education, and Welfare, Washington, D.C.
World Health Organization Publications, Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N.Y.

Commercial Organizations and Trade Associations

Many businesses and industries maintain educational departments to acquaint the public not only with their product but also with the general health problems relating to their field. Much of the material they distribute is useful for the classroom. Before using the material in class however, the teacher should ascertain the school policy regarding the use of commercial or trade produced products.

Aetna Life Insurance Company, Educational Department, Hartford, Conn.
American Automobile Association, Traffic Engineering and Safety Depart-

ment, Pennsylvania Avenue at Seventeenth Street, Washington 6, D.C.
American Seating Company, Ninth at Broadway, Grand Rapids 2, Mich.
American Institute of Baking, 400 E. Ontario Street, Chicago 11, Ill.
Borden Company, 350 Madison Avenue, New York 13, N.Y.
Bicycle Institute of America, Inc., 122 East 42 Street, New York, N.Y.
Blue Cross Commission, 425 N. Michigan Avenue, Chicago 11, Ill.
Bristol-Myers Products Division, 45 Rockefeller Plaza, New York 20, N.Y.
The Cereal Institute, 135 S. LaSalle Street, Chicago, Ill.
Connecticut Mutual Life Insurance Company, Hartford, Conn.
Correct Seating Institute, 412 Laurel Street, Reading, Pa.
Eli Lilly and Company, Educational Division, Indianapolis, Ind.
Equitable Life Assurance Society of the U.S., 393 Seventh Avenue, New York, N.Y.
Florida Citrus Commission, Lakeland, Fla.
General Foods Corporation, 250 North Street, White Plains, N.Y.
General Mills, Inc., 400 Second Avenue S., Minneapolis, Minn.
John Hancock Mutual Life Insurance Company, Health Education Service, 200 Berkeley Street, Boston 17, Mass.
Johnson and Johnson, New Brunswick, N.J.
W. K. Kellogg Company, Department of Home Economics, Battle Creek, Mich.
Kimberly-Clark Corporation, Educational Service, Neenah, Wis.
Lever Brothers Company, Educational Department, 390 Park Avenue, New York 22, N.Y.
Metropolitan Life Insurance Company, School Health Bureau, 1 Madison Avenue, New York 10, N.Y.
Nationwide Insurance Company, 246 N. High Street, Columbus 16, Ohio.
National Biscuit Company, 449 West 14 Street, New York, N.Y.
National Canners Association, Home Economics Division, National Canners Building, Washington, D.C.
National Dairy Council, 111 N. Canal Street, Chicago 6, Ill.
National Dairy Products Corporation, 260 Madison Avenue, New York, N.Y.
National Livestock and Meat Board, 407 S. Dearborn Street, Chicago 5, Ill.
The Paper Cup and Container Institute, 551 Fifth Avenue, New York 17, N.Y.
Personal Products Corporation, Educational Department, Milltown, N.J.
Charles Pfizer and Company, Inc., 800 Second Ave., New York 17, N.Y.
Procter and Gamble, P.O. Box 599, Cincinnati, Ohio.
Prudential Insurance Company of America, Public Relations and Advertising Department, Newark, N.J.
Ralston Purina Company, Checkerboard Square, St. Louis 2, Mo.
Sonatone Corporation, Elmsford, N.Y.

E. R. Squibb and Sons, 745 Fifth Avenue, New York 22, N.Y.
Sunkist Growers, Box 2706 Terminal Annex, Los Angeles 54, Calif.
Tampax, Inc., Educational Director, 161 East 42 Street, New York 17, N.Y.
Travelers Insurance Company, Hartford 15, Conn.
United Fresh Fruit and Vegetable Association, 777 Fourteenth Street N.W., Washington, D.C.
United Fruit Company, Educational Service Department, Pier 3, North River, New York 6, N.Y.
Wheat Flour Institute, 309 Jackson Boulevard, Chicago 6, Ill.

Human Relations and Mental Health

These areas loom larger each year in any consideration of human health problems. Teachers must be prepared to deal not merely with the individual as such, but with him as an entity among others in relation to his world. The rising science of human personality is to be reckoned with. The following are some of the principal literary leads into ar understanding of this area.

Allport, Gordon W., *Becoming*, New Haven, Conn., Yale University Press, 1955.
American Academy of Political and Social Science, *Mental Health in the United States*, 1953.
American Association for Health, Physical Education and Recreation, *Developing a Democratic Human Relations* First Yearbook, Washington, D.C., 1951.
Andrew, G., and Middlewood, E. L., "Goals of Mental Health Education Selected by a Group of Experts," *Mental Hygiene*, XXXVII (October, 1953), 596–605.
Association for Supervision and Curriculum Development. *Fostering Mental Health in Our Schools*, National Education Association Yearbook, 1950.
Barton, W. F., "Education of the Public," *Bibliography of Mental Hygiene*, XXXVII (January, 1953), 36–46.
Bernard, Harold W., *Mental Hygiene for Classroom Teachers*, New York, McGraw-Hill, 1952.
Cattell, Raymond B., *Personality: A Systematic, Theoretical, and Factual Study*, New York, McGraw-Hill, 1950.
Comming, Elaine, and Comming, John, *An Experiment in Mental Health Education*, Cambridge, Mass., Harvard University Press, 1957.
Cunningham, Ruth, and associates, *Understanding Group Behavior of Boys and Girls*, New York, Bureau of Publications, Teachers College, Columbia University, 1951.
Dahl, Robert, *Breakdown*, Indianapolis, Bobbs-Merrill, 1959.

Dunbar, H. Flanders, *Emotion and Bodily Changes,* Fourth Edition, New York, Columbia University Press, 1954.

Dunbar, H. Flanders, *Mind and Body: Psychosomatic Medicine,* New York, Random House, 1955.

Dunn, Halbert L., *Your World and Mine—Essays on Human Relations,* New York, Exposition Press, 1956.

Frank, L. K., Harrison, R., Hellersberg, E., Mochover, K., and Steiner, M., *Personality Development in Adolescent Girls,* Yellow Springs, Ohio, Child Development Publications, 1950.

Frank, Mary, and Frank, Lawrence K., *Your Adolescent at Home and in School,* New York, Viking, 1956.

French, T. H., *The Integration of Behavior,* Chicago, University of Chicago Press, 1953.

Gallagher, J. Roswell, and Harris, Herbert I., *Emotional Problems of Adolescents,* New York, Oxford University Press, 1958.

Gorman, A., "Prejudice, A Problem of Mental Health," *Today's Health,* February, 1954, pp. 22–33.

Gross, Nancy E., *Living With Stress,* New York, McGraw-Hill, 1958.

Gutworth, Samuel W., *You Can Stop Worrying,* Chicago, Regnery, 1957.

Henry, Nelson B., *Mental Health in Education,* Chicago, University of Chicago Press, 1955.

Hymes, James L., *A Healthy Personality for Your Child,* Washington, D.C., Children's Bureau Publication, No. 337.

Jersild, Arthur, *In Search of Self,* New York, Bureau of Publications, Teachers College, Columbia University, 1952.

Kanner, A. Leo, *Word to Parents About Mental Hygiene,* Madison, Wis., University of Wisconsin Press, 1957.

Kaplan, Louis, and Baron, Denis, *Mental Hygiene and Life,* New York, Harper, 1952.

Katz, Barney, and Lehner, George, *Mental Hygiene in Modern Living,* New York, Ronald Press, 1953.

Katz, Barney, and Thorpe, Louis P., *Understanding People in Distress,* New York, Ronald Press, 1955.

Klein, D. B., *Mental Hygiene, A Survey of Personality Disorders and Mental Health,* New York, Holt, 1956.

Layman, Emma McCloy, *Mental Health Through Physical Education and Recreation,* Minneapolis, Burgess, 1955.

Lindgren, Henry Clay, *Mental Health in Education,* New York, Holt, 1954.

Lott, George M., *Story of Human Emotions from a Teen Age Viewpoint,* New York, Philosophical Library, 1958.

Menninger, William C., *Understanding Yourself,* Chicago, Science Research Associates, 1951.

Milbank Memorial Fund, *The Epidemiology of Mental Disorder,* New York, 1950.

Moustakas, Clark E., *The Teacher and The Child,* New York, McGraw-Hill, 1956.

National Association for Mental Health, *Reading List,* New York, n.d.

National Institute of Mental Health, *The Teacher and Mental Health,* Public Health Service Publication No. 385, 1955.

Overstreet, H. A., and Overstreet, B. W., *The Mind Alive,* New York, Norton, 1954.

Ridenour, Nina, *The Children We Teach,* New York, Mental Health Materials Center, Inc., 1790 Broadway, 1956.

Stern, Edith M., and Hamilton, Samuel W., *Mental Illness: A Guide for the Family,* National Association for Mental Health, 1954.

Witmer, Helen L., and Kotinsky, Ruth, *Personality in the Making,* New York, Harper, 1952.

Sex Education and Family Life

The teacher's knowledge and resources in this area should be ample. There is excellent literature available. A school library well supplied with material suitable for children would be a desirable aid to teaching. The following represent titles helpful to teachers for their own preparation.

Albrecht, M., "What to Tell Your Daughter About Menstruation," *Parents Magazine,* September, 1955, pp. 38–39.

American Social Hygiene Association, *Education for Personal and Family Living,* New York, The American Social Hygiene Association, 1790 Broadway.

Beigel, Hugo G., *Encyclopedia of Sex Education,* New York, Stephen Daye Press, 1952.

Bowman, Henry A., *Marriage for Moderns,* Third Edition, New York, McGraw-Hill, 1954.

Butterfield, Oliver M., *Sexual Harmony in Marriage,* New York, Emerson Books, 1953.

Cady, Ernest, and Cady, Frances, *How to Adopt a Child,* New York, Whiteside, and Morrow, 1956.

Child Study Association of America, *Parents' Questions,* New York, Harper, 1947.

Christensen, Harold T., *Marriage Analysis, Foundations for Successful Family Life,* Second Edition, New York, Ronald Press, 1958.

Duvall, Evelyn Millis, *Facts of Life and Love for Teen-Agers,* Second Edition, New York, Association Press, 1956.

Duvall, Evelyn M., and Hill, Reuben, *When You Marry,* New York, Association Press, 1953.

Duvall, S. M., "Frank Answers to Straight Questions; with Study-Discussion Program," *National Parent-Teacher,* October, 1954, pp. 12–14.

Duvall, S. M., "Sex Morals and Marriages; with Study-Discussion Program," *National Parent-Teacher,* November, 1955, pp. 14–16.

Eckert, Ralph G., *Sex Attitudes in the Home,* New York, Association Press, 1956.

Eggert, C. L., "Sex Education in Elementary Schools," *Education Forum,* May, 1955, pp. 431–434.

Fishbein, Morris, and Reeves, Ruby J., *Modern Marriage and Family Living,* New York, Oxford University Press, 1957.

Gruenberg, Sidonie M., *Wonderful Story of How You Were Born,* Garden City, N.Y., Hanover House, 1952.

Hurlock, E. B., "Timetable for Sex Education," *Today's Health,* August, 1954.

Josselyn, Irene J., *The Adolescent and His World,* Fourth Edition, New York, Family Service Association of America, 1957.

Kinsey, Alfred C., Pomeroy, Wardell B., and Martin, Clyde E., *Sexual Behavior in the Human Male,* Philadelphia, Saunders, 1948; and *Sexual Behavior in the Human Female,* Philadelphia, Saunders, 1953.

Klein, Robert A., and Schuman, B. J., *How to Have a Baby: Techniques for Fertile Marriage,* New York, Hermitage, 1951.

Koos, Earl Loman, *Marriage,* New York, Holt, 1957.

Lerrigo, Marion O., and Southard, Helen, *Parent's Privilege; A Story About You; What's Happening to Me? ; Learning About Love; Sex Facts and Attitudes,* New York, Dutton, 1956.

Manley, H., "Sex in Schools," *The Journal of School Health,* February, 1951, pp. 62–69.

Marshall, E. L., "First Grade Unit on Human Development," *Elementary School Journal,* December, 1955, pp. 168–172.

McHose, Elizabeth, *Family Life Education in School and Community,* New York, Bureau of Publications, Teachers College, Columbia University, 1952.

Sadler, William S., *Courtship and Love,* New York, Macmillan, 1952.

Sadler, William S., *A Doctor Talks to Teen-agers; A Psychiatrist's Advice to Youth,* St. Louis, Mosby, 1948.

Stone, Abraham, and Hines, Norman E., *Planned Parenthood–A Practical Guide to Birth Control Methods,* New York, Viking, 1951.

Strain, F. B., "Sex Education That Makes Sense; with Study-Discussion Program," *National Parent-Teacher,* November, 1954, pp. 4–6, 35.

— 9 —

Evaluation of Instruction

The term evaluation means "appraising something according to a set of values."[1] To evaluate health instruction means to find out how effective it has been in the lives of students. If the classroom experience leaves little or no imprint on the ideas or behavior of the students, then it has little value. If, however, the learning has real bearing upon the way of life, then the instructional materials and methods may be considered good.

In evaluating health instruction the thing appraised is the total learning experience—the course, the subject matter, the methods of organizing and presenting the material. The set of values to be used in appraisal must be the intended outcomes. If a man wants to evaluate—measure—the length of a table, he uses a foot rule or yardstick, or perhaps a metric measuring tool, depending upon whether his values are in feet, yards, or meters. If he wanted to evaluate fire power of a rocket he would, if seeking to measure its penetration potential, fire it against various thicknesses of concrete or steel. First, he would decide what he was going to evaluate: the penetrating ability of the rocket. Then he would establish his values: penetration into concrete or steel. Then he would appraise his rocket by measuring how far into the steel or concrete it went when fired from a certain distance under stable conditions.

Appraising health instruction is not unlike that. Values have to be set. What are we after in health instruction? What are the intended

[1] *Health Education,* Fourth Edition, Report of Joint Committee of the American Medical Association and the National Education Association, 1948, chap. 18, p. 337.

outcomes? Once values are set, then devices are constructed by which one hopes to tell how good the instruction has been at attaining them.

Evaluation and Measurement

Is there a difference between evaluation and measurement? When one gives a quiz or an examination to a class, is one examining or measuring? They are not mutually exclusive; measurement may be a part of evaluation. A teacher may ask some questions on a written test about nutrition to see how much students know about the subject *at the time* —that is measuring; but it may be a part of her long-term evaluation plan to see just how eating habits have been modified by the whole unit on nutrition. Measurement focuses on specific knowledge or skills of the moment; evaluation is an on-going process aiming to judge the amount of change (preferably improvement) over a period of time. Evaluation is concerned with the appraisal of the distance covered toward arriving at all the goals, the success of the total plan; measurement may appraise only a specific step toward those goals. Measurement is principally concerned with knowledge of subject matter; evaluation wants to know how this knowledge fits into the individual's pattern of health behavior, the way he lives.

Purposes of Evaluation

Simply stated we evaluate in health education to see if we are doing any good. There is absolutely no guarantee that because a student "takes a health course" that it will affect him favorably. Evaluating devices intend to find out.

More formally put, the purposes of evaluation in health education, as adapted from C. C. Cowell, are:

1. To help teachers, parents, and pupils examine the health values they want to achieve.
2. To encourage administrators, teachers, parents, and students to evolve certain policies, blueprints of goals and direction, certain basic agreements by which these health values may be achieved.
3. To provide a periodic check on the degree to which specified health objectives are attained for an individual or group of individuals.
4. To improve counseling methods by providing basic information and new insight into the health needs of the individual students.
5. To improve the teaching process by assisting in the establishment of

sounder principles for the modification of experiences, facilities, time allotment, and method to aid in the achievement of objectives.

6. To give students, parents, teachers, and administrators a certain psychological security, a feeling of accomplishment in achieving their health educational purposes.
7. To form the basis for sound public relations by helping the citizen realize that his money is contributing toward healthy and happier children today and better citizens tomorrow.[2]

Procedures

Most effective evaluating or measuring of plans follows rather clear-cut procedures. (1) The objectives of whatever is to be evaluated are discovered and stated. If the success of a lesson is to be judged, the objectives or the goals, the intent, of the lesson have to be known. (2) Instruments (devices, tests, techniques) have to be found to tell whether the sought-for objectives are being met. If knowledge is an objective, then tests of knowledge are used. If behavior or action is an objective, then a test of knowledge would not do—but some way of appraising behavior would. (3) The instruments are then used and some estimation of the success of the teaching process is made.

What Is Evaluated?

There may be many intended outcomes of the instructional program in health. They may be specific, like the intention that all the students will thereafter be vaccinated for smallpox, or they may be rather general, like the intention that all students will make better adjustments to life's problems, or have an attitude of acceptance toward scientific discoveries. The teacher can aim for certain outcomes phrased in this way and can list them ahead of time as guides in course direction. If such a procedure were followed, i.e., if the teacher listed the objectives of each unit of work, they would probably fall into one of the following four categories: health behavior, health status, health knowledge, and health attitude.

HEALTH PRACTICE OR BEHAVIOR

It is apparent that healthful behavior, conduct, living, is the principal thing to be sought in health instruction. To get people to *live* according

[2] Adapted from Charles C. Cowell, *Scientific Foundations of Physical Education*, New York, Harper, 1953, p. 227.

to the best in the scientific world is the ultimate goal. To *become* vaccinated, to *eat* adequately, to *live* successfully in marriage, to *meet* a crisis in life—these are goals of greatest importance. "What do you *do*?" "How do you live?" These are the prime questions to be asked of students as a result of instruction in health. The answers are an evaluation of behavior or health practice.

HEALTH STATUS

What people *do* is closely related to what people *are*. The common salutation "How are you?" is, in essence, a form of evaluation. If, as a result of instruction, a student changes in his *being*—if he *is* different, or feels different—if a health condition has changed for the better, then the instruction has made a favorable contribution to his welfare. This sort of thing is a matter of status, organic or psychological condition, and may be evaluated only by the application of a great many tests and laboratory analyses usually available only to the physician or technician.

HEALTH KNOWLEDGE

Knowledge is the basis for much of behavior and status. If a person does not *know* that a serum is available for diphtheria he may never become immunized. If he does not know about the value of X-ray examinations for tuberculosis he may never have such an examination. Knowledge is important although it must be clear that knowledge alone may have little bearing upon the improvement or protection of health. Many may *know* of the existence of immune serums but unless they *act* in accordance with what they know their knowledge is of little use. Some studies have shown that "there is only a moderate correlation (.42) between health knowledge and the application of knowledge."[3] That is why health knowledge is third in importance, after behavior and status, as a value in measuring the benefit of instruction.

HEALTH ATTITUDE

There is also the rather uncertain and somewhat tenuous value known as *attitude*. The dictionary defines an attitude as "an habitual way of regarding something." One may have attitudes, therefore, about

[3] Walter M. Washnik, "What the High School Senior Knows About Health," *Research Quarterly*, XXVIII, No. 2 (May, 1957), 178–179.

quacks, or vaccination, or doctors, or about "taking care of oneself." Certainly the best motivation for getting things done, for living in accordance with the best scientific thought, is found if the regard for science is high—if the attitude is right. Again, however, it is not the attitude but the action that counts. A person may have a fine attitude toward vaccination, and yet *if he is not vaccinated* his attitude is valueless. Neither attitude nor knowledge then is an altogether reliable indicator of the value of an instructional program. It is what a person *is* and *does* which, in the last analysis, truly counts.

METHODS OF EVALUATION

In seeking to evaluate the worth of health instruction the teacher can get an estimate or a measure of each of the four values just mentioned—health behavior, health status, health knowledge, and health attitude. Health being the exceedingly complex thing it is, no one estimation in any of those categories will tell the whole story of the effectiveness of teaching. For example, in a one-semester health class some students may do nearly perfect work when tested for knowledge and yet be maladjusted emotionally in their personal lives. Others may carelessly expose themselves to skin diseases although their "attitude" is all against that sort of thing. Someone may have an undiscovered tuberculosis, but studying about the disease will have no bearing on its treatment unless the class provides for the actual experience of the X-ray and other analyses.

Evaluating one's health is complicated business. Evaluating the outcomes of a course of instruction is only slightly less so. The products of teaching may not show up on the final examination. Outcomes or values may not be readily apparent. A college hygiene teacher once reported this occurrence as an illustration of deferred values: The teacher usually gave an interesting unit on marriage and family problems. Year after year the unit had been given with the usual examinations testing the knowledge of the students in the subject. Once, ten years after the teacher had left the college, he met one of his former students, who told him how much that course had meant. The former student mentioned particularly how the unit on marriage had eased many a problem of his own and had helped him establish a happy family life. Here are deferred values. No evaluation at the time of in-

struction would have shown these. About all one can do in evaluation with students at the time is to hope to get an estimation of immediate values. And even with that in mind it is difficult to tell what outcomes result from the course and what from other influences.

But evaluation is *not* an end in itself. The process is only worthwhile if it becomes a part of learning and improves either the behavior of the student or the quality of the program. The fact that a health knowledge test may show that 20 percent of a given group of students never heard of Dr. Salk, or believe that fluorides in water cause syphilis, is of account only in that those results tell us something of our job to be done in teaching. The fact that 20 percent of our students may have failed the first written test is of importance only if we can know something of the health behavior of the individual student who failed.

Evaluation or measurement may, furthermore, take up an unreasonable amount of class time. Some teachers give an hour test every week, or they overemphasize the health inventory. Actually evaluations are most useful when they test student progress or development and not merely the ability of the student to give back what the teacher gave. And, they should, above all, help the student to see his own strengths and weaknesses, to make his own realistic evaluation of himself. This is why test papers should always be discussed in class after the test.

What kinds of evaluation of the instructional program can be made?

Evaluating Health Practice

Health behavior or practice (erroneously called "habits") may be evaluated by several different techniques:

THE HEALTH PRACTICE INVENTORY

The health practice inventory allows the student an opportunity to record what he does. Frequently, as in the Johns Health Inventory, students record whether they always, frequently, sometimes, rarely, or never do certain specific things.[4]

Or, in a booklet published by the Cattaraugus County School Health Service and developed by Dr. Ruth Grout, elementary children are given the chance to mark as follows:

[4] Ned B. Johns and Warren L. Juhnke, *Health Practice Inventory*, Stanford University Press, 1952.

Yesterday I did the things in the list below which I have marked "yes." Those which I did not do I have marked "no." Fill in the blank spaces.

. . . 1. I had . hours of sleep last night.

. 13. I was troubled with indigestion.

. 15. I had a bowel movement during the day.

. 34. I was troubled with a toothache.

. . 43. I greeted my schoolmates in a friendly manner.[5]

These inventories may be made to cover the suggested activities of the whole course or of any given unit. Scoring should be done with caution in that there are so few health practices which *all* should do *always* and *none* should *ever* do. For example, to fail to have a bowel movement every day is no indication of faulty practice; likewise, crossing a city street at other than an intersection may frequently be acceptable practice. Absolute scores for rating students for grades in the course are difficult to get from these inventories and they are best used as bases for individual consultation and as points of departure for class discussion.

THE CONSUMER INVENTORY

The consumer inventory is similar to the health practice inventory but more limited in scope. It is constructed to deal with such questions as "What do you use?" "What do you buy?" "Why do you buy it?" "Would you use . . . ?" "Do you believe . . . ?" For example:

1. Do you buy your toothpaste as a result of car card advertisements?
2. Do you believe the "medical" reports as cited by cigarette advertisements?
3. How effective do you believe Beto is in the treatment of diabetes? 100%–75%–50%–0%.

A great variety of such questions in the form above or as true-false or multiple-choice statements can be constructed covering nearly all phases of health quacks, commercial psychologists, muscle-building systems, beds, foods, vitamins, because nearly every aspect of healthful living has been subjected to the merciless treatment of commercial advertising.

[5] *About Myself*, Cattaraugus County School Health Service, Olean, N.Y.

The limitations of such tests are the same as for the inventories, namely, they may not reflect what the student got out of the course, and they are not easily used, therefore, as grades.

OBSERVATIONS

A variety of observation techniques can be used effectively. For example, class discussion may stimulate the group to evaluate their own susceptibility to radio commercials. Each student may, for a week, make note of each time he listens to the commercial (preferably advertising something to do with health) and estimate the extent to which he believes or doubts or acts upon the implication in the script. These observations can then be brought into class for discussion and checking.

Or individuals within a group may observe each other. They may, over a week or a month or some such period, keep notes on the other fellow's temper, his courtesy, his cooperativeness, his selfishness. Then, if the appropriate rapport can be established, the behaviors implicit in the observations can be evaluated.

Teachers and parents can make observations on such matters as sleep, rest, food, worry, friendliness, cooperation, boy-girl relationships, extroversion-introversion. These observations can be recorded on prepared forms if desirable and later made the basis for individual consultation.

The bibliography at the end of this chapter has a selected list of published evaluating devices in this area, and teachers intending to use such inventories would do well to secure them or model their own after existing and standardized examples.

Evaluating Health Status

There are so many ways to appraise organic and psychological states as to make it difficult to present here any condensed list or description of them. Most of the important ones are usable only by physicians or by psychologists. The teacher is limited in this category because to appraise a health condition usually requires diagnostic or other technical skills which educators do not have.

These evaluating procedures range from the simple administration of a vision test from an eye chart to the complicated diagnosis of tuberculosis from X-ray and sputum examination or to the interpretations possible only to the experienced cardiologist from his stethoscope and electrocardiograph. Teachers may form an impression of the social

health of a student by giving a social distance test but a psychologist or psychiatrist would be needed to evaluate fully the psychic or emotional disorders attendant, say, upon a fear of cancer or of financial reverses.

For purposes of understanding this range more clearly these tests of organic and psychological states may be grouped as follows:

TESTS OF SO-CALLED "ORGANIC EFFICIENCY"

There are many organic efficiency tests and most of them are within the ability of the teacher to administer. They are sometimes called tests of "physical fitness" and are useful in a general way in appraising "condition" or muscular skill. They should not be used as diagnostic tests or tests of total health.

MEDICAL AND PSYCHIATRIC TESTS

Medical tests are all beyond the scope of the teacher and involve such tests as urinalysis, the basal metabolism test, blood tests, the Mantoux, tests of reflexes, and many others used by physicians in diagnostic and interpretive practice. They reflect organic and psychological states usually of a specific nature and it would be unusual if changes noted on such tests could be directly and specifically attributed to the instruction given in a health course.

TESTS USEFUL TO TEACHERS

Useful information about the development and status of children may be obtained by teachers by carefully and skillfully conducted appraisals of such elements as posture, vision, hearing, weight, height, and general tone and energy. With practice and experience a teacher should be able, not to make a diagnosis of condition, but to supply information which may lead to necessary adjustment of the child's educational program. For the best of these tests one should refer to the bibliography of Chapter 19.

Evaluating Health Knowledge

It is within the area of health knowledge that the teacher does the best work in evaluation. The tests are the easiest to administer. The results are most readily noted and the evaluating process itself is a useful educational tool. Knowledge tests, when gone over with the

students afterward, help them understand their weaknesses and strengths in health information. When used prior to the course, the tests are useful in placing students in homogeneous class sections. They are useful as quiz and final examination material, and, when their results are analyzed item by item, they help teachers and supervisors to determine where individual students need assistance and where teachers need to bolster their course offerings.

Perhaps their most frequent uses are at pretests, placement tests, and examinations in specific health courses. In small sections as well as in larger groups, knowledge tests aid in determining the status of students and, because of the very nature of the tests, inevitably throw some light on the more important element of health behavior and the less important element of health attitude.

There are several different kinds of knowledge tests, such as:

THE ESSAY

Students are asked to write on a subject at a length determined or undetermined, e.g., "Present the arguments for and against vaccination for smallpox," or "What significant findings concerning the health of the nation's man power resulted from Selective Service examinations in the Second World War?" or "Present the three principal anatomical discrepancies in the theory of chiropractic," or "What factors in the smoking of tobacco make smoking an unwise practice for young people?" There are unlimited possibilities for such essay questions. They should be chosen in relation to the material dealt with in the class; should reflect more of an ability to interpret and apply than to recall anatomical fact; should be marked for worth on their accuracy and logic. They are always subject to the great weakness of all essay questions—their lack of objectivity.

THE OBJECTIVE TYPE

The more popular type of knowledge test is the objective type, and the resources at the end of this chapter should be consulted for examples of some standardized tests of this sort. Most teachers try their skill at working up the questions to fit their own courses, using the published standardized tests for placement in sections or for measuring the knowledge status of large groups. There are various kinds of objective tests: true-false, multiple choice, completion, matching, dis-

crimination, garbled paragraphs, and others, and a teacher would do well to try them all and interchange them, from time to time, comparing their results. In making objective tests the teacher should consider the following suggestions:

1. The multiple-choice question with five reasonable alternatives (one being the correct choice) is perhaps the best kind of objective question. For example,

1. Conservative estimates are that the percentage of people in this country infected with syphilis is: (a) 1/5 of 1%; (b) 2 to 5%; (c) 10 to 20%; (d) 20 to 50%; (e) over 50%.
2. Diphtheria antitoxin is used for treatment after a person has been exposed or infected by the disease. This type of immunity is: (1) active; (2) passive; (3) permanent; (4) general; (5) natural.
3. The greatest danger that may come from self-medication is: (1) the drugs in the medicine may prove harmful; (2) the medicine may be worthless; (3) the medication may not suit the physiological condition; (4) the proper diagnosis of a serious condition may be postponed; (5) that one may pay an exhorbitant price for the medicine.
4. Which one of the following is least likely to be an early cancer symptom or danger signal: (1) a sore that does not heal; (2) unusual bleeding; (3) persistent pain; (4) a lump; (5) marked change in bowel movements.
5. The phrase which best describes a mature person is: (1) he lets others make his decisions; (2) he requires immediate satisfaction; (3) he can evaluate himself and his motives; (4) he is quick to judge others; (5) he is eager to please others.[6]

2. The completion question is the least satisfactory. ("If a wound is bleeding profusely a should be applied." The correct word might be "bandage" but students might write in "tourniquet" or "stitches.")

3. "Knowledge of functional significance rather than knowledge of terms should be stressed."

4. "Judgment and choice of conduct in problem situations is possibly of greater health significance than simple recognition of correct answers."[7]

5. Considerable leeway in favor of the student must be given when

[6] From W. P. Cushman, Columbus, Ohio, The Ohio State University, 1958.

[7] Howard L. Conrad, "The Construction of Health Knowledge Tests," *Journal of Health and Physical Education*, December, 1936, p. 620.

marking because much of the material in hygiene is not so precise and clear cut as to lend itself readily to clear-cut answers.

6. Tests should always be marked and handed back with ample time given to study the errors. Derryberry suggests that a briefly written or even an oral explanation of the true version of each question will enhance the educational value of the test itself.[8] The teacher should, by all means, explain the correct version of each item and if the question remains unclear or ambiguous he should not hesitate to discard it.

7. All objective test questions should be "tried out" on several fellow teachers or other adults before being given to the class.

8. It makes little difference whether the scoring is done by merely adding up the number of errors or by the more complicated system of subtracting the "wrongs" from the "rights" or counting two off for every error and adding one for every "right."

9. Trick questions are always resented and should be avoided.

10. Objective tests for health knowledge decrease greatly in usefulness below the seventh grade.

Smith has summarized much of the experience of others in testing for knowledge into these four excellent suggestions. They are important in testing for health knowledge:

1. Use the recall type of examination often, so that students will study for all examinations with the idea in mind that they may be called upon to recall and use material rather than merely to recognize it.

2. Give frequent examinations, so that purposeful study will go on at all times rather than in short spurts just before the end of the year or the end of a large unit of work. The short daily quiz or problem, or at least a weekly check on learning, is of great value.

3. Give each student an opportunity to learn the correct answer soon after he has attempted to answer a question. If his answer is wrong, show him why it was wrong or incomplete, and give him an immediate opportunity to learn the correct response and why it is correct.

4. Construct examinations that encourage the student to *apply* the factual material he has learned, rather than examinations that merely invite him to make pat, superficial statements about facts that he recognizes. Though factual knowledge is often very useful, we must use our examina-

[8] M. Derryberry and A. Weiseman, "Using Tests as a Medium for Health Education," *Public Health Reports*, March, 1950, p. 485.

tions for helping the child apply the facts to situations similar to those in which the facts will later be used.[9]

Evaluating Health Attitudes

As has already been pointed out, because of the intangible and tenuous nature of attitudes it is extremely difficult to obtain a satisfactory evaluation of them. If a teacher wants to determine the attitude of students toward religious healing, for example, or toward the vitamin fad almost any question asked or any observation made would deal with what the students *know* about the subject, or what they *do* about it.

How one feels about a subject or what "habitual regard" he has for it is estimated, in the last analysis, by what he does, knows, or says about it. The teacher can find out just about all he needs to by carefully evaluating knowledge and behavior and from such an evaluation estimating the elusive attitude.

There have been, however, worth-while efforts to evaluate health attitudes. By using observations (again perhaps of behavior), discussions and interviews, autobiographical records, and written tests, involving choices of the "right" or "best" thing to do, a teacher may find out something of how the students think about an issue. One of the best illustrations of this last type was conducted by Southworth, Latimer, and Turner, involving 15,000 students, and was called "Your Opinion, Please!" The following is an excerpt from Test III of this extensive survey of the health practices, knowledge, attitudes, and interests of students in Massachusetts:

TEST III

Your Opinion, Please!

Directions: The following statements represent opinions about various phases of health and you are to express your own point of view about them. Indicate how you really feel about each statement immediately after you read it. Do not pause too long on any of them. Read each item and in the blank on the answer sheet corresponding to the number of the item, blacken the space as follows:

[9] Henry P. Smith, *Psychology in Teaching*, Englewood Cliffs, N.J., Prentice-Hall, 1957, p. 342.

1. Under A (agree) if you agree with the whole statement.
2. Under U (uncertain) if you are uncertain about the whole statement.
3. Under D (disagree) if you disagree with the whole statement.

Examples:

	A	U	D
1. All children should be allowed to play with fireworks.	1.		–
2. Children should drink milk.	2. –		

Statement	Key	Percent of Correct Answers
1. If a person believes that any fat or starchy food causes his skin to be excessively oily, he should follow a prescribed diet.[10]	A	51
2. The natural form of vitamins obtained from foods (balanced diet) causes the vitamins to be more effective in the body than when they are obtained from vitamin capsules.	A	87
3. There is no danger of disease from raw, unwashed fruits and vegetables.	D	86
4. If one is going on a diet, he should do so under a physician's guidance.	A	93
5. The only purpose of food is to develop a strong muscular body.	D	75
6. One should select a balanced meal when ordering food in a cafeteria or restaurant.	A	88
7. A high school student should play at least one sport which he will be able to carry on after school days are over.	A	64
8. A person who is well and strong does not need to give any thought to the kind and amount of food he eats.	D	92
9. If two people maintain that the use of certain foods produces different effects on the skins of different persons, one or the other or both probably made incorrect observations.	D	42
10. The peddler of narcotic drugs should be given a jail sentence.	A	73

[10] W. H. Southworth, Jean V. Latimer, and C. E. Turner, "A Study of the Health Practices, Knowledge, Attitudes, and Interests of Senior High School Pupils," *Research Quarterly*, May, 1944, p. 118.

In this particular section devoted to opinion, 90 such statements were given and although a student would know something about the subject matter involved in the statement and base his opinion on this knowledge, nevertheless these tests represent a fine attempt to discover the "habitual regard" for the problem.

Attitudes, thus, are listed as least important in the evaluation possibilities not because the point of view of the student toward health or toward science is unimportant but because to locate an attitude in order to evaluate it is nearly impossible, and because the reaction of a student to the health problem involved can be more easily determined by evaluating his knowledge and behavior regarding it.

Rugen and Nyswander conveniently group health status, knowledge, and attitude as "understandings" and present the following summary of procedures available for evaluating them:

1. Observation of pupil behavior and the recording of these observations in behavior journals, in anecdotal records, or in other ways.
2. Self-appraisal by the pupil in terms of standards of behavior previously agreed upon.
3. Check lists and survey forms based on accepted "standards" and used at periodic intervals.
4. Interviews with pupils, parents, other teachers, and community workers, including home visits and individual counseling.
5. Health-examination records and reports from physicians, dentists, and nurses.
6. Reports from local physicians, ophthalmologists, and dentists regarding the increase in medical and dental supervision of school-age groups.
7. Diaries and other autobiographical records of pupils.
8. Specially created situations within the classroom and school which give pupils opportunity to apply voluntarily what they have learned.
9. Paper-and-pencil inventories aimed at application of principles and evaluation of sources of help.
10. Expression of pupil opinion which considers positive health behavior the "thing to do," because the natural leaders in the school have accepted it.
11. Records of the sale of milk, salads, fruits, whole-grain cereals, enriched bread, etc., in the school cafeteria or in local food establishments, including dairies and stores.
12. Samples of pupil creative work, such as drawings, models, exhibits,

photographs, motion pictures, or written and oral reports which show sound application of health principles.[11]

EVALUATING THE CURRICULUM

In addition to evaluating the transformations taking place in the individual student as a result of learning about health in the course, the character of the material in the course itself should be appraised. For example, Mary Beyrer and others ask pointed questions attempting to determine the validity of the information taught in the class. They have established criteria to evaluate the reputability of the source of information—an important step for teachers to take. Here follow some examples from this study:

The evaluation of health information may be determined by appraising:

1. The publisher, association, or agency, and its purpose.
 a. Is the publisher, association, or agency recognized as being of good reputation in the field of health and manned by trained and competent health personnel?
 b. Why has this current health information been presented? What is the basis of the presentation?
 c.
2. The qualifications of the specific author, speaker, or organization.
 a. What are the qualifications of the writer or speaker disseminating the health information? . . .
 b. If a ghost writer is used or a reporter allowed to tell the story, has the author checked the actual writing and will he stand back of the facts presented?
3. The date of the presentation.
 a. Is the vehicle of communication of recent date or recent revision, or, if not, is it acceptable to contemporary workers in the field?
 b. Is the subject matter or content of recent date?
 c. Are the data of such recent origin as to lack proper testing and thus possibly be unreliable?
4. The procedure and style of presentation.
 a. How has knowledge of the subject matter been gained?
 b. Is the presentation concise and understandable?

[11] National Society for the Study of Education, Forty-Fifth Yearbook, *The Measurement of Understanding in Health Education,* University of Chicago Press, 1946, part i, p. 219.

c. Are effective visual aids used?
d. Are devices of propaganda discernible?
e. Is there a spirit of chicanery involved in the presentation?

5. The opinions of others, such as medical experts, public or private agencies, and reliable friends familiar with the topic.
 a. Has a reputable and qualified person or agency reviewed and approved this presentation? Is the expert, agency or friend especially qualified and recognized as capable of reviewing these data and rendering an opinion?
 b. What are the qualifications of the friends whose opinions are rendered?
 c. Does the appraisal of others concur with your own scientific knowledge of the subject?[12]

The total course or curriculum may be evaluated by asking many questions of it such as:

1. Do students have the following additional learning experiences:
 a. Participation on committees working on health problems?
 b. Providing health news for the student publication?
 c. Participating on radio programs dealing with health?
 d. Carrying on campaigns for special health purposes?
 e. Contributing to community health services?
 f. Assisting elementary teachers with health activities?
 g. Sponsoring health protection clinics?
2. Is health instruction made interesting and useful to students by:
 a. Using teacher-pupil planning process?
 b. Using community health agencies' resources for enriching student experiences?
 c. Using health specialists for consultation and as discussion leaders?
 d. Using visual aids, exhibits, charts, and other teaching aids?
 e. Demonstrations followed by supervised and applied practice?
 f. Working on solutions to local community, home and school health problems?
 g. Using teachers from other departments for assisting on special health problems?
 h. Giving students real experiences with health activities in the school and community?

[12] Mary K. Beyrer, Rebecca Brokenbrough, Robert P. Carroll, Oscar W. Bupton, Raymond C. Heidloft, Katherine MacDonald, Carol Rice, M.D., Theresa Shelton, Mary L. Strough, and Ruth E. Tandy, "How Reliable Is Health Information," *Journal of Health, Physical Education and Recreation*, XXVII, No. 4 (April, 1956), p. 11.

i. Making excursions to see health activities and study health problems?
j. Making surveys?
k. Using a wide range of library resource material?
l. Evaluation of current newspaper and magazine articles?

3. Is student responsibility for health practices developed through:
a. Student government health activities?
b. Assembly programs promoting health interests?
c. Radio and school broadcasts on health programs?
d. Operating first aid or health room (under supervision)?
e. Assisting in school lunch program?
f. Considering adequacy of school sanitary conditions?
g. Surveying health conditions in the school and community?
h. Organizing and giving services to community health agencies?
i. Screening tests?
j. Participating on the school health council?[13]

To date little significant work has been done in comparing the effectiveness of the three patterns of teaching—through integration, correlation, or a specific course. There are many experienced teachers who favor each of the patterns, claiming that their favorite produces the most lasting results in the development and protection of the health of the student. Those who favor the integrated program contend that although certain specific knowledge of the anatomy and physiology of the body may not be dealt with, nevertheless students emerge from one of the larger core units with a better understanding of health and health problems than if they had studied a specific and single health unit. The meaning of things is understood because it has been taught in relation to a living, integrated problem of human affairs.

Those supporting specific teaching dislike the alleged "diluting of health material" by teaching it in association with larger problems and prefer to produce results in knowledge and practice by seeking them directly and with no competition or diversion.

It may be safely assumed that any progressive, well-taught, and scientifically sound course of study will be productive of results in the lives of students. There is evidence that both the integrated and the

[13] Adapted from: *Health Instruction* (Bulletin No. 4), Committee on School Health Councils, New York State Council on Health Teaching, 1565 Franklin Avenue, Mineola, New York, 1954.

correlated plans have done well in broadening the base of student understanding in health matters just as there is ample reason to believe that a well-taught course in health is a useful and productive experience.

Not all courses of study, however, are equally good. They need evaluation. Any teacher should constantly keep his instructional program, his course, and his teaching aids flexible enough to be receptive to criticism and improvement. Nothing can be more deadly than a health course ill conceived in the first place and taught the same way year after year with no thought as to whether it is interesting or productive of results in improving students' lives.

Health courses of study can and should be evaluated in both general and specific terms. They may be analyzed as a part of a larger curriculum or they may be scrutinized specifically for their own value as a teaching medium.

For example, any health course of study, as a part of a larger curriculum, might be evaluated in accordance with the Bruner criteria. These are divided into four parts: philosophy, content, activities, and evaluation of pupils' work, and the criteria themselves are phrased in question focus with directions for rating the courses of study being evaluated. For example, such questions as those given below are useful in determining whether the course of study is meeting the needs of the students. These and others comprise the Bruner criteria and may be recommended for course-of-study evaluation.

Is self-activity considered fundamental learning?
Is significance attached to pupil meanings and insights?
Will the materials help to broaden the social interest of the pupil?
Are the materials organized around broad areas of significant human experience?
Do the activities arise from real life situations?
Is there a sufficient range of activities to provide adequately for the various interests and needs of the group?[14]

More specifically, a single course not in relation to a course of study or to a curriculum can be evaluated by applying criteria to it and

[14] Herbert B. Bruner, "Criteria of Evaluating Course of Study Materials," *Teachers College Record*, November, 1937, p. 107.

judging the materials and methods used in the course on the basis of their excellence. The following criteria are useful for this purpose:

1. The content material must be scientifically accurate throughout and in thorough accord with the best available knowledge in the life sciences.
2. The experiences should foster the concept of health as a qualitative result of the interdependent functioning of all the vital systems, involving the mental and social aspects of living as well as the physical.
3. The experiences should constantly interpret health from a social point of view, explaining health in terms of its social uses.
4. The experiences should be selected in response to data from student life which indicate the needs and interests of the learners, and not chosen solely in terms of what course makers believe should be included. The experiences should be drawn out of, identical with, or linked to the life of the learner.
5. The experiences should be arranged on an activity basis, giving constant opportunity for healthful practice, and aimed more at the development of conduct than at the acquisition of knowledge.
6. The order of thought presentation should be from the particular to the general, each new principle, abstraction or generalization being developed through intimate, concrete, individual experience before reaching its final form.
7. There should be an abundance of material of varying difficulty so as to admit of choice suited to the needs of the individuals who differ in capacity and experience.
8. The experiences selected should be progressively graded so as to provide for continuous growth in healthful living and, if possible, reliable instruments of measurement should be applied to note the progress of each learner.
9. Frequent periods for review should be interspersed throughout the course, and if examinations, quizzes, or tests are used they should be analyzed afterwards with the class.
10. There should be provided in connection with each major thought division an up-to-date series of standard and reliable references, so arranged as to stimulate in the student a desire for a widening of his interest and knowledge.
11. The general tone of the experiences with respect to all controversial issues should be one of discreet judgment, free from prejudice or inaccurate content. The learners should never be colored with emotional bias for want of scientific data.
12. The experiences should require a mastery of a minimum of scientific terminology, enough to handle the ordinary health processes intelligently.

13. The experiences should provide frequent and specific opportunity for correlation with other areas in the curriculum and with other parts of the health education program.
14. The activities of the course should lead to cooperation and understanding between the school and the home and community.

SUMMARY OF EVALUATION OF INSTRUCTION

"When we speak of ways of evaluating health education, we are really speaking of ways of determining how far and how successfully students have moved along the dynamic path of learning. What steps have they taken toward learning, applying, and integrating the principles of health education into their behavior as they try to solve the problems they face in daily life?"[15]

Although it is apparent that to estimate the value of instruction is a complex and not altogether objective process, nevertheless teachers should attempt it. Each device mentioned in the preceding pages is useful in its own way and there is none that could not be improved upon. For those who attempt evaluation of health instruction the following principles should be observed:

1. *The objectives of the unit or course to be evaluated should be clearly stated prior to the evaluation.* The appraisal is made to determine the success which is met in reaching the objectives.

2. *All appraisals in which students are the respondents should be geared to their age.* There is no use asking a student for evidence if he cannot understand the question or phrase the answer.

3. *The results should be kept honest no matter how meager or discouraging they may be.* Teachers sometimes "pad" evaluation results to make the situation look better. Clean, honest evaluations are the only ones which are helpful.

4. *It is not necessary to have the results entirely in objective and tangible form.* Subjective judgments, opinions, "jury" judgments, personal testimony are all admissible (with understanding as to their worth) as evaluating instruments. They should be used.

[15] Andie L. Knutson, "Evaluating Progress in Health Education," *Journal of Health, Physical Education and Recreation,* XXVIII, No. 5 (May–June, 1957), p. 21.

RESOURCES FOR EVALUATION

Evaluations of Programs

Dearborn, Terry H., *A Check-List for the Survey of Health and Physical Education Programs in Secondary Schools,* Stanford, Calif., Stanford University Press, 1940.

Jackson, C. O., "Let's Rate Your Health Education Program," *Journal of Health, Physical Education and Recreation,* September, 1955, p. 29.

Knutson, Andie L., "Evaluating Health Education, *Public Health Report,* LXVII, No. 1 (January, 1952). Washington, D.C., Superintendent of Documents, U.S. Government Printing Office.

Knutson, Andie L., "Evaluating Progress in Health Education," *Journal of Health, Physical Education and Recreation,* XXVIII (May, 1957), 21–22.

Knutson, Andie L., "The Influence of Values on Evaluation," *Health Education Monographs,* No. 3 (1959), 23.

Knutson, Andie L., "Pretesting and Evaluating Health Education," *Public Health Monograph No. 8,* Public Health Service Publication No. 212, Washington, D.C., U.S. Government Printing Office, 1952.

Knutson, Andie L., "Pretesting: A Positive Approach to Evaluation," *Public Health Reports,* LXVII, No. 1 (July, 1952), Washington, D.C., Superintendent of Documents, U.S. Government Printing Office.

Michigan State Department of Education, *A Check-List for Surveying the Secondary School Health Program,* Bulletin 346, Lansing, State Department of Education, 1946.

Rugen, Mabel E., and Nyswander, Dorothy B., *The Measurement of Understanding in Health Education,* National Society for the Study of Education, Forty-Fifth Yearbook, University of Chicago Press, 1946.

Shaw, J. H., "Evaluation of the School Health Instruction Program," *American Journal of Public Health,* XLVII (May, 1957), 582–586.

Measuring Health Knowledge

Franzen, Raymond H., Derryberry, Mayhew, and McCall, William A., *Health Awareness Test,* New York, Columbia University, Bureau of Publications, 1946. This is a group test of health information, attitudes, and practices, applicable in grades 7-9. It is composed of a story test, a matching test, and a true-false test. These tests are valid and are satisfactory for use.

Gates, Arthur I., and Strang, Ruth M., *Gates Strang Health Knowledge Test,* Revised Edition, New York, Columbia University, Bureau of Publica-

tions, 1945. This test aims to measure the individual's knowledge of many phases of healthful living.

Greenberg, B. G., Harris, Mary Ellen, MacKinnson, Frances C., and Chipman, Sidney S., "A Method for Evaluating the Effectiveness of Health Education Literature," *American Journal of Public Health,* XLIII (1953), 1147–1155.

Kilander, H. F., *Kilander Health Knowledge Test for High School Students,* New York, World, 1952.

National Achievements Tests, *Health Test,* Chicago, Benjamin H. Sanborn Company, 221 E. 20th Street, Grades 3-9.

Rash, J. Keough, "Refining the Health Education Test," *Journal of School Health,* January, 1953 and February, 1953, pp. 10–13, 39–43.

Rugen, Mabel E., and Myswander, Dorothy B., *The Measurement of Understanding in Health Education,* National Society for the Study of Education, Forty-Fifth Yearbook, University of Chicago Press, 1946.

Smith, Henry P., *Psychology in Teaching,* Englewood Cliffs, N.J., Prentice-Hall, 1957, p. 346.

Dearborn, Terry H., *College Health Knowledge Test,* Stanford University Press, 1950. A standardized test composed of 100 multiple-choice items (5 alternative) grouped into 11 sections covering the area of personal health.

Appraising Health Practice

French, Will, and associates, *Behavioral Goals of General Education in High School,* New York, Russell Sage Foundation, 1957.

Johns, Edward B., and Juhnke, Warren L., *Health Practice Inventory,* Stanford University Press, 1952.

National Safety Council, *National Safety Council Tests,* The Council, Chicago, 1946. These tests, of one page each with illustrations, are listed as Safety Lesson Units and are for specified grades.

Neher, Gerwin, *Health Inventory for High School Students,* Los Angeles, California Test Bureau, 1942. This test is designed as a health measure for grades 9-12. It is divided into two parts: Part I is "Personal Information" and Part II is "What You Do About Health." The test reveals those areas in which health instruction is needed.

Southworth, W. H., Latimer, J. V., and Turner, C. E., "A Study of the Health Practices, Knowledge, Attitudes, and Interests of Senior High School Pupils," *Research Quarterly,* May, 1944, pp. 118–136. Although this is a study of senior-high-school pupils, the tests which were given to the pupils are in the article and could very easily be adopted. Most of the tests are of the true-false type.

Sutton, Wilfred C., "An Appraisal of Health Attitudes and Practices of College Students," *Journal of School Health,* XXVI, No. 4 (April, 1956), 125.

EVALUATION OF HEALTH ATTITUDES

Byrd, O. E., *Health Attitudes Scale,* Stanford University Press, 1941. Tests for secondary schools and colleges.

Edwards, R., "An Approach to Health Attitude Measurement," *Journal of School Health,* XXVI (September, 1956), 215–19.

Leonard, Margaret, L., and Horton, Clark W., *An Inventory of Points of View Related to Health,* Sacramento, California State Department of Education, 1949.

Mayshark, Cyrus, "Critical Analysis of Attitude Measurement in Health Education, *Research Quarterly,* XXIX, No. 3 (October, 1958), 309.

Myers, Frank H., "A Safety Attitude Scale for the Seventh Grade," *Research Quarterly,* XXIX, No. 3 (October, 1958), 320.

Thurstone, L. L., and Chave, E. J., *The Measurement of Attitude,* Chicago, University of Chicago Press, 1928.

PART III

ADMINISTRATION, SERVICES, AND ENVIRONMENT

— 10 —

Scope and Appraisals

It would be ideal if all children from kindergarten to college came to school in perfect health. They do not. Experience has shown that of 100 children of school age 1 has a heart disorder, 20 have vision difficulties, 10 have hearing impairments, 15 are impaired nutritionally, 10 have some problem associated with growth, from 20 to 40 have some emotional or psychological disturbance, and practically all of them have one or more dental defects.[1]

Furthermore, an appreciable proportion of them have impairments such as allergies, orthopedic problems, ear, nose and throat disorders, and disorders of the skin, or are chronically fatigued. And then, in addition, there are those "who live on the borderline of good health practice . . . who do not get enough sleep, recreation or fresh air and sunshine."[2]

Do these conditions interfere with learning? Most certainly they do. And it is at this point that the short-sighted critic of educational programs who says that education should be concerned solely with life of the mind, the intellectual processes, reveals how far out of step he is with the facts of life. He does not seem to appreciate that life is lived as a whole, an entity, and that what affects a child affects him all over. If vision is impaired, learning will be impaired. If learning is not well motivated, emotional disturbances may occur. If motor skills are undeveloped, personality problems may arise. If fatigue is a product of malnutrition, all the scholarship prizes in the world will not be able to

[1] Thomas E. Shaffer, "School Health Is a Community Undertaking." *The Ohio State Medical Journal*, LIII, No. 5 (May, 1957), 542.

[2] *Ibid.*, p. 542.

bring that child to win one if diligent and persistent effort in physics is required.

And the critic fails to understand the present level of the intelligence of the rank and file of parents with reference to the care of their children. The critic assumes all parents know what to do, want to do what is right, and are so intelligently concerned about their children that they *will* do what they should do. Unfortunately these favorable conditions at home do not obtain—not even in some of our "best" neighborhoods. *The school has to take the leadership in order to help parents see what must be done in child care and development.*

THE SCOPE OF THE PROGRAM

The school meets this opportunity by developing a program of health services and environmental care to match its program of instruction described in Part II. The school knows that a considerable portion of its educational effort will be wasted unless it does. School people know how difficult it is to teach a partially seeing, tired, or sick child, and the school makes it its business to find those children and get somebody to do something about their handicap.

Out of this rather simple and logical point of view has grown extensive and valuable programs involving cooperative effort of many persons, professional and otherwise. These range from the rather uncomplicated use of the town doctor to immunize children in school against diphtheria to the full-fledged programs of services as found in many of the large cities. In fullest development the programs in cities like Los Angeles, Denver, Cleveland, Detroit, New York, and others serve as patterns for practice and policy the world over.

Services Included

What constitutes a well-established health service and environmental care program? Reading the annual report of the Division of Medical Services of the Philadelphia Public School for 1957, one reads that that city, as typical of many, sponsors programs of medical and dental examinations, a cardiac program, programs for vision, hearing, orthopedics, tuberculosis, and venereal disease control. They supervise an individual remedial physical education program, employment certification, and examinations for competitive sports. In the area of commu-

nicable disease control, they administer diphtheria, tetanus, poliomyelitis, and smallpox vaccinations. Several special studies were made of the use of electroencephalograms, psychiatric evaluations, rheumatic fever, and extended absences. The Division conducts throughout the year, including the summer months, child care centers where working mothers bring their children and where health examinations and some remedial treatment are given. The Division administers a program for school employees, including teachers, involving pre-employment and periodic medical examinations. In addition, the Division conducts in-service educational programs for practical nurses, X-ray technicians, dental assistants, medical examiners, and school nurses.

Those are the services rendered and the activities performed by a metropolitan school health staff. There are variations of it, of course, but it is in these directions that this phase of school health education is moving.

Emerging Purposes

Although policy makers and the temper of the people change their minds from time to time certain purposes are motivating the development of these services. These are:

1. To enable the child, as he exists in reality, as a total organism, to develop most fully in the educational experience
2. To enable school personnel to exercise what wisdom they have and what action they can to prevent sickness, injury and debilitation from occurring
3. To aid the handicapped child to compensate for his disability and to lead as full a life as he can.

Development, protection, compensation—these are the three principal purposes of this phase of school health education with the emphasis being on development. As Dr. Baumgartner has put it: "What we are after, both educators and doctors, is to help in rearing a new generation of human beings who are buoyantly healthy in body and spirit; whose creativeness and sense of social responsibility are given the greatest possible opportunity for expression; who have an unshakeable conviction of their own worth and the worth of other people. . . ."[3]

[3] Leona Baumgartner, M.D., "Better Health for School Age Children," *The Child*, August–September, 1950.

Program Objectives

With those basic purposes in mind certain objectives emerge and are fulfilled by the development of the various elements of a health service program. It becomes the objectives of a program:

1. To determine the health status of pupils and students as a basis for indicated action
2. To counsel with students, teachers, parents and other interested personnel with reference to the course of action indicated by the findings
3. To control communicable and other diseases within the school population
4. To provide emergency care for the sick or injured
5. To maintain a school environment, a school life, and a school day conducive to good health and good learning.

THE FIRST STEP: APPRAISAL

The whole program of services is planned and administered in relation to a realistic appraisal of the needs of children and the nature of their problems. Obviously nothing can be done for a student about any health problem until the problem has been discovered. It is unreasonable to construct any kind of school health program merely on the assumption that "things are bound to be wrong with children." The modern scientifically constructed program seeks the facts; it uses neither sentiment nor fiction as its base, but seeks to learn through careful individual appraisal the status of its students and to construct whatever kind of program is necessary on the basis of the revealed findings.

Purposes of Appraisals

Why does the school want to appraise the health of its children? Is this not a private affair between the home and family doctors? Is not the school stepping out of its field in seeking data about health? The answers to these questions may be had if one studies carefully the nature of the appraisals the school sponsors or recommends and the purposes of them *in relation to the educational program.*

The school now sponsors or recommends periodic medical examina-

tions, special examinations for special cases, examinations for athletes, screening tests, and continuous observation of the health of children by teachers and nurses. Why? There are five reasons:

1. *To provide information which will lead to constructive alterations in the life of the child.* It is only good sense (and a wise expenditure of public funds) to assure the child's fitness to receive an education. Industry and business recognize the value of well workers over the sick or disabled. The school also finds it more profitable to teach well children and thus it seeks out those who have retarding conditions in the hope that something can be done to remove the cause of the retardation.

An appraisal often indicates clearly that the child should (a) be examined further for more careful diagnosis by the use of tests not ordinarily found in school examinations or (b) be referred to the family or other physician for attention to the conditions found. This purpose of appraisals is one of the earliest to appear historically and the one most commonly thought of today. It is, perhaps, the most important, and is the one which takes the appraisal efforts of the school into the home and community in order to get the *action* necessary to make the discovery worthwhile.

To establish a chain of action which will find the children in need of medical, dental, psychological, or social services and get them promptly to these people for care fulfills this purpose. For several million school children it will be the only chance they will have for the discovery and care of impairing handicaps.

2. *To provide the basis for adjustments of the school program to meet individual needs.* An education aimed at the development of the whole child cannot work in the dark. It must have information about its charges. Teachers who want to assist in the total development of the child must know of those factors which are retarding it or which are likely to interfere with growth. To teach most effectively, teachers must know their children—their possibilities and limitations, their physical as well as psychological status.

Not the least of reasons for this discovery of information is that teachers and others can modify the school study program to adapt it to individual needs. Children with partial vision can be moved forward or given special sight training; hard of hearing children can be seated where they can hear; cardiacs can be scheduled only on lower floors;

rest periods can be arranged to relieve tensions. There are a great many ways by which the school program can and should be modified to the advantage of individual boys and girls if the data—the facts of need—can be found and made available.

3. *To provide the basis for individual compensation for irremediable handicaps or deviations.* There are many children who have defective hearing or sight, are abnormally short or tall or fat, have burns or scars or malformations, show after effects of mastoid infection, or are handicapped by many and varied conditions serious enough to interfere with living life to the fullest. These deviations create social, psychological, or physical problems in the lives of the students. School personnel is in a strategic position to help them compensate for these conditions. The short can be made to feel more comfortable and secure, the tall less conspicuous; the glandular obese can be helped to find success somewhere, the crippled to achieve desired ends. These compensations are not wholly medical by any means. Many of them are social and psychological, and teachers have an obligation to help in the process. The child must be taught to live well in spite of the irremediable condition found on appraisal.

4. *To provide the basis for classification in a modern program of physical education.* Neither election nor assignment to physical activity or active recreational pursuits can be made well without some health appraisal. Physical education has long since passed the day of wholesale mass exercise given without benefit of health information about each participant or competitor. The student who has a hernia or a heart defect, who is psychotic or fatigued or rheumatic, or who has dysmenorrhea must be located, and a physical education program suited to the child in light of his limitations must then be developed. No intelligent teacher of physical education wants to be unaware of the health status of his students nor does modern physical education subscribe to the antiquated notion that unless the child is "physically fit" there is nothing for him in physical education and, hence, he should be excused. No child, no high-school or college student, should ever be "excused" permanently from physical education. Given adequate information about the student and medical advice as to his possibilities and limitations, a physical educator should and does proceed to construct a program in light of the needs and capacities of the student. Only occasionally, in the rare instances of postoperative or pretuber-

culous or rheumatic conditions, will it be advisable to deny a child his physical education because of "health" reasons. Much better to provide the physical educator with the information needed and expect him to build a program in response to the needs of the individual. Health data are the first screen used in modern physical education. A good program cannot be built without them.

5. *To serve as educational experiences.* The very procedure of appraisal often brings students into a clearer and more intimate understanding of the nature of competent professional health service. It is a truism to say that students learn from any and all of their daily experiences. Certainly they learn much from their out-of-classroom experiences. Every time the nurse or physician comes to the school, every time "the doctor" calls at home or the child is taken to his office, the child learns something about health services—about nurses and doctors. He may develop confidence, respect, and a sense of the great good which medical services perform. He may gain the impression, on the other hand, that doctors are slipshod, impersonal, vague, and noncommunicative. He may learn what good medical practice is or he may learn the reverse.

School health examinations, tests, and other appraisal procedures may serve to teach him many things about himself. He may learn the nature of his own condition, his weakness or his deviations. He can only learn to compensate for his handicaps if he knows about them. The chances are very good that the first contact many children will have with professionals, that is, physicians, dentists, and nurses, will be in school. It is important that the first impression be a good one.

These, then, are the five reasons why health appraisals in their various forms should be made part of an educational program. It may be difficult for some to understand why the school should go to the expense of employing nurses, physicians, or dentists. They may feel the school has no business "in the practice of medicine." A careful study of these five purposes will indicate that health appraisals as represented by the kinds described in the following pages do *not* mean that the school is in the practice of medicine. Such information is needed so as to facilitate the educational process. *The school's business is to practice education, not medicine, but it needs medical advice in order to develop the best educational program.*

Of the five reasons given above only the first one is patently medical

in its outcome. Diseases and defects should be found in order to treat and correct them if possible. At that point the school serves only as the third and interested party in getting the pupil to the physician, dentist, or psychologist.

KINDS OF APPRAISALS

Roughly classified there are five kinds of appraisals used by many modern schools. These range from the kind of nondiagnostic appraisal by teachers and parents to thorough medical and laboratory tests by physicians and they may be described as follows:

Continuous Observation

Continuous observation can begin in the home. As the Joint Committee says:

> In areas using buses to transport children to and from school, the parents should be doubly alert to evidences of illness. The symptoms of the common cold are similar to the early symptoms of many other communicable diseases of childhood. They also resemble the beginning signs of some of the more critical infections that afflict both children and adults. The parent, therefore, should keep the child home from school when such symptoms appear. A sick child, spending from 15 to 75 minutes on a crowded school bus not only exposes other children to whatever illness he may have, but also is likely to contract secondary infections that may complicate his own illness. When the child is not sent home until he arrives at school he is subjected to another fatiguing ride, with considerable inconvenience to the school and his parents, and needless exposure of additional persons to the infection.[4]

From that early beginning in the home the observation then becomes continuous through the day with all teachers in all rooms and under all circumstances being alert to significant change and developments in the appearance or behavior of the child which changes may indicate a health problem.

What do teachers and others look for? What is observed? Where does one look? There are various lists of observable points available.

[4] Joint Committee on Health Problems in Education of the National Education Association and the American Medical Assoication, *Health Appraisal of School Children*, Washington, 1957, p. 43.

The very first thing is in the morning, perhaps even before the children, young or old, get settled in the room, when the teacher could make a quick observation for signs of respiratory or skin disease in some such sequence as this:

1. Eyes: are they watery, red, inflamed, dull, bloodshot, or do they show any other uncharacteristic sign?
2. Nose and throat: is the nose watery or are the throat membranes redder than usual? Sometimes teachers are skilled at using tongue depressors and look at the back of the throat and along the cheeks.
3. Skin: does the skin of the face, neck, or collar line, or of the inside of wrists reveal rashes or other unusual discolorations, pallor, or flush?
4. Hair: are there any indications of scalp infections or the presence of nits or lice? The teacher may riffle the hair with a tongue depressor to detect these conditions.
5. Glands: is there any sign of swollen glands? Some teachers are able to feel for swollen glands at the back of the neck, underneath the jaw, or along the sternomastoidal muscle.
6. General: the teacher may be able to set a general impression of the student's health simply by asking him how he feels or by his appearance.[5]

Such a sequence of observation cannot be used to diagnose or identify disease; it is useful only as a preliminary screen against the common childhood diseases. Its effectiveness is contingent upon the action taken after the teacher makes the observations on each child. The child with suspicious signs, i.e., looks, appearance, "feelings" different from the normal, is moved out of the homeroom to the nurse's office or to the office of some other staff member who is given the power of exclusion. The excluding officer looks again for the same signs, talks further with the child about his feelings, illness at home, exposures in the neighborhood. If possible, he talks with the parents by telephone. He must decide whether the child stays in school that day or goes home for parental and, probably, medical care. If the child is to be sent home, the parents should come for him or the school should provide transportation. Children should not go home alone under these conditions. If the parent cannot receive the child at the moment the child should be kept

[5] An extensive list of observable points is to be found in government pamphlet No. 68 of the U.S. Office of Education, entitled *What Every Teacher Should Know About the Physical Condition of Her Pupils*, by J. F. Rogers. See also Joint Committee on Evaluations of Health Problems, *op. cit.*, pp. 13–15.

at school but in isolation from other children until he can be sent home safely.

Obviously, the preliminary and early observation by the teacher will be of no avail unless excluding machinery is set up. The whole purpose of the observation is to try to break up incipient epidemics by breaking the contacts between the sick child and the unexposed. Children who show suspicious signs should be isolated from others immediately.

Nowhere along this chain of events is a school physician a necessity. It is always good to have one but the success of the enterprise does not require one. The excluding personnel could be a nurse, a particularly well-prepared teacher, the physical and health education teacher, a counselor, or the principal himself—whichever is available and capable of making intelligent judgments. Only two such judgments are necessary: those of the homeroom teacher and the excluding officer. The interests of the remaining children are served when the sick child is isolated, and the latter's interests are best served when he is at home and under the care of a physician.

Other Observations

Teachers and nurses are in strategic spots to make other observations during the course of the day. Teachers, particularly, even in secondary schools, see the students more constantly and more intimately than anyone else on the school roster. Thus, the teacher is in a position continually to observe the child and to make reports of the observations. It is possible that children in need of attention may be found by the teacher or nurse. The attention of parents and family physician may then be called to them with the strong recommendation that appropriate steps be taken in regard to the conditions found.

The observations serve still another purpose. A large number of schools have a physician serving them only in a limited and part-time capacity. Over the years health education personnel have learned how futile it is to strive for an annual complete physical examination for every pupil. Such a goal simply cannot be attained—and might not be wholly valuable even if it could be attained. This is because in childhood and youth, illnesses or handicaps develop so rapidly that one dares not wait for an annual examination to find them. Sometimes these conditions develop in a matter of hours, or days, and they must be discovered early if proper care is to be given them. At any rate, it is

important to use the physician to best advantage and that may well be only to see and examine children who are showing deviations from the normal, or who have been selected for a checkup for one reason or another.

The continuous observation of health goes on all the time. It is not diagnostic and seeks only evidence of normal growth and development or deviations from the norm. It requires the trained eyes and skill of a nurse or a competent teacher who has the ability to see, record, and refer where needed.

These nonmedical observations are important frequently in preventing the development of more serious physical or psychological states. The observations include behavior, immediate and long-term, as well as physical signs, and the teacher has, perhaps, the best advantage over other personnel in that she "knows" the child better than anyone else in the school.

Occasionally schools concentrate such observations on one day of the month or semester. The implication here is not good. Teachers should be *constantly* vigilant and continuously aware of the development of their students and ready to help by reporting the first signs of difficulty rather than waiting for the fourth Friday of the month to do so.

In addition to the observation points for respiratory and skin diseases described on page 287, teachers should take note of the following:

1. Frequent absences
2. Inattention, listlessness, lethargy
3. Loss of weight, tiredness, breathlessness
4. Chronic depression or unhappiness
5. Overaggressiveness or irritability
6. Squinting, difficulty in seeing or hearing
7. Stuttering or other speech handicap
8. Urinary incontinence or unusually frequent urination
9. Skin blemishes, eruptions, rashes, pallor
10. Extraordinarily poor posture
11. Frequent nosebleeds
12. Continuously inferior scholarship
13. Dental decay, toothache, discolored teeth
14. Mouth breathing, chronic colds, swollen glands in neck
15. Unclean hair, lice, blemishes of scalp

The whole point to such a program of continuous observation is to set in motion a chain of action for the benefit of the child. These things might happen:

1. The teacher makes an immediate adjustment in the room, or in the instructional program, e.g., for a hard-of-hearing child.
2. The teacher communicates her findings to the home with a recommendation (but *not* a diagnosis) that the matter be looked into further, preferably by a physician. Teacher-parent conferences are extremely useful at any level of education. Both sides exchange information about the health and behavior of the student. Sometimes teachers discover danger signals which parents thought were normal. Sometimes it helps greatly to get the explanation of prolonged or frequent absences.
3. The teacher refers the child to the school nurse, if there is one, or the public health nurse who may be serving the school.
4. The nurse may make further and more extensive observations before reporting to the parents or school physician.
5. Either teacher or nurse may report what they find to the school or other physician for purposes of obtaining medical advice—and perhaps treatment. For example: "Schools have been advised that pupils who exhibit any of the following symptoms should be referred for early medical examination: Unexplained or recurrent nose bleed, frequent urination, muscle spasm, fainting spells, accident proneness, excessive thinness, sores on skin, abnormal muscular or skeletal development, or who complain of muscle or joint pains."[6]
6. Eventually, if the condition warrants it, the matter has to come to the attention of parents who must be encouraged to do something about it. At that point, having reported and urged action, the teacher has discharged her responsibility. It is always hoped that parents will consult a physician for purposes of getting at the origin of the problem and bringing about an effective solution.

Screening

Screening has become a vital part of any appraisal program. It differs from the program of continuous observation inasmuch as screening

[6] Committee on Child Health of the Chicago Medical Society, ***Physicians and the Health Program for Chicago Public School Children,*** The Chicago Plan, 1958, p. 9.

frequently involves the use of equipment or the administration of tests. There are various kinds of screens to be described:

Vision. Important screening for vision can be done by nonmedical people. These techniques are described in Chapter 14.

Hearing. Chapter 14 contains descriptions of tests for hearing.

Growth and weight. Measuring height and weight are two of the oldest and, in some respects, most useful techniques for discovering children who have growth problems. Since the very begining of health work in schools the relation between height and weight and normal development has been the subject of much speculation. For many years, for example, there was assumed to be a "normal" weight for every height and age, and by consulting the tables one could tell whether a child was above or below the "normal" for his age. More recently, however, new techniques, based upon a recognition of the individuality of growth, have sought to plot the growth in height and weight in terms of its quality and to detect as early as possible the deviation from the growth pattern which is normal for *that child.*

Two of these techniques are currently being used by schools. They are sufficiently complicated in nature to prohibit description here but descriptive materials on them should be read.[7]

By plotting periodically the height and weight of a child on already prepared charts or grids, one can roughly compare his actual current

[7] Howard V. Meredith, *Physical Growth Record.* A booklet with directions for use of the record, obtainable from the American Medical Association, 535 N. Dearborn Street, Chicago, or the National Education Association, 1201, 16th St., N.W., Washington, D.C. An account of the development and use of this record is well presented by Dr. Meredith himself in "A Physical Growth Record for Use in Elementary and High Schools," *Journal of the American Public Health Association,* July, 1949, p. 878.

Norman C. Wetzel, "Physical Fitness in Terms of Physique, Development and Basal Metabolism," *Journal of the American Medical Association,* March 22, 1941, p. 1187. Norman C. Wetzel, *Instruction Manual for Use of the Grid for Evaluating Physical Fitness,* National Education Association Service, Inc., 1200 W. Third St., Cleveland, Ohio.

Two illuminating articles on the Wetzel Grid are published in the February 1950 issue of the *Journal of School Health* as follows: "The value of the Wetzel Grid in a School Health Program and Problems Related to Its Use," by Robert W. Deisher, M.D., and "A Manual Prepared for Use in Instruction Sessions on Use of the Grid . . . ," by the Child Health Center of the University of Washington and the Seattle-King County Health Department. The latter is particularly valuable for its detailed instructions on how to use the grid.

Donald K. Matthews, *Measurement in Physical Education,* Philadelphia, Saunders, 1958, p. 213.

status with his expectancy. The relation of a child's height and weight curves, as he grows up to the appropriate norms, throws light on his growth progress. If deviations begin to appear they may be interpreted as growth abnormalities or failures and their reason can be sought through appropriate medical or psychiatric examination. Thus, the growth records become useful screens by which to find those children in need of medical attention.

Detection of tuberculosis. Screening for tuberculosis is widely practiced and is described in Chapter 11.

Hemoglobin testing. The Standards Committee[8] recommends the micro method for high-school girls as a screen which schools might request at the time of the physical examination. It is not a screen for nonmedical personnel nor is it in general use.

Posture. Standards for "good" posture are almost as numerous as postural variations themselves. In view of the fact that deviations from the upright body carriage may be reflections of malnutrition, disease, fatigue, adverse psychological states, or muscular weakness (as well as a hereditary conformation), pronounced variations should be noted and their causes sought. There is no one single good or acceptable standard for posture which can reasonably be used as an effective screen.

Skin and Scalp. Teachers and nurses will frequently see skin blemishes and parasites in the hair or crusts on the scalp. The presence of a rash, pronounced acne of the face, scabs, ulcers, or excessive redness, or of lice in the hair, indicates that medical treatment is needed.

Speech. Children who stammer, stutter, or have abnormally slow speech can be recognized easily and referred for attention to specialists in speech correction.

Social Adjustment. Children who present marked behavior problems, who have difficulty getting along with others in play or work, who are pronounced nonconformists may be picked out by their overt behavior and referred to specialists or others for assistance. Individual behavior such as twitching, nail biting, tantrums, or pronounced daydreaming may be significant of psychological or social problems. Counseling and clinical services for such children are discussed in Chapter 12.

Histories and Inventories. These are virtually indispensable to a good screening program. A health inventory filled out by parents has

[8] See p. 298.

been shown to be very useful and reliable in supplying teachers with data they need and otherwise would not get. Such an inventory was prepared by the San Francisco Department of Health.[9] From the replies from parents, the teachers received useful information on needs and capacities, previous illnesses, behavior problems, immunization, and other personal matters. In secondary schools and colleges the older students themselves are capable of supplying history data. A reading of such histories has become important, particularly to teachers of physical education and other active areas, in adjusting the program to fit the student. Examples of such histories are given on pages 307 and 309.

Dental Case Finding. The Committee on Health Service Program for Secondary Schools[10] says merely that "it may be assumed that all students in secondary schools need dental care." The problem then becomes one of getting students in the hands of a dentist at annual intervals. Among younger pupils the one who screens for dental cases will examine the teeth for obvious evidence of decay, unclean teeth, and gum inflammation or ulceration. When such cases are screened out arrangements should be made by someone to secure appropriate dental treatment for them.

ACTION FOLLOWING SCREENING

No plan for finding children in need of medical, social, or educational adjustment by the use of nonmedical personnel will be effective unless the steps leading to action are well planned. In the first place it should be realized that such screening is done by a nonspecialist (the teacher or nurse) and thus should never be construed by anyone as diagnostic or final. Parents, particularly, should be protected against the development of feelings of either confidence or fear as they are apprised of the results of screening tests. It must be realized by all that the tests are given to find those children who need further and more thorough examinations by personnel in medicine or psychology or in some other area of specialization. The following steps should be taken to make the screening effective:

1. The teacher or nurse makes the tests.

[9] Reported by Charlotte Singer-Brooks, M.D., in the *American Journal of Public Health*, June, 1952, p. 661.

[10] Of the American Public Health Association. See report in 1951-1952 *Yearbook* of the Association, May, 1952, p. 139.

2. Any findings (such as impaired vision) are immediately used by the teacher in adjusting the school program to the status of the child.
3. The teacher and nurse hold a conference to go over their respective findings on each child and to decide which children should be recommended for a medical examination.
4. These children, once picked out, are examined by either a school physician or the family doctor or some other.
5. Reports are made both to the home and to the school of recommended action to remove the impairment or to improve the development of the student.
6. The school then uses all means at its disposal (letters, visits) to get the parents to follow the action recommended.

The Physical or Medical Examination

The physical or medical appraisal seeks to determine the status or quality of health of a student through the use of the examining and diagnostic skill of a physician. It is not a teacher's or nurse's examination, although a teacher or nurse frequently assists in it; a physician is required. It requires time, money, and effort to conduct and is helpful when the findings are used to satisfy the five clear purposes of such appraisals mentioned in previous paragraphs. To conduct such examinations, file the records in locked compartments, and do nothing with the data except arrange statistical tables is to expend energy and money foolishly. If the examinations are given at all the findings should be used for the benefit of the education and health of the child.

These examinations go by various names depending upon local custom. Physical examinations, medical examination, health examination are the most frequent used terms. It makes little difference what they are called as long as they are well done and useful. There are several features of such examinations and their administration which must be secured for greatest effectiveness:

1. The health history is a vital part of any examining procedure. The physician and other personnel concerned with the child should secure the history of any previous experience with communicable or other disease, accidents, emotional maladjustments, nutritional difficulties, immunizations, operations, routine practices of sleep, elimination, and eating behavior, moods, fatigue, menstruation, birth abnormalities, dental history. Dates, places, and durations are important in history, as are parental observations and comments. Data of this kind are vital to the

examining physician and other counselors in determining a course of action to be recommended for a given child.

2. The history should be obtained on a standard form, usually one recommended by the examining physician, prior to the examination by mail or in person from the student and his parents.

3. Physicians, being prepared to conduct such examinations, know what to look for. The examination of skin, heart, chest, throat, teeth, eyes, hearing, nose, lungs, psychic states, emotional manifestations, hernia, bony configurations, or any other possible deviations should be made for the purpose of helping to fulfill the previously mentioned five purposes. The school physical examination makes no pretense of being a thorough clinical examination. It uses no involved clinical tests. These are included elsewhere. It is no substitute for the kind of examination a child gets if he is taken to a clinic or hospital for a "thorough checkup" and yet it need not be and usually is not a carelessly or too speedily performed examination. One physician cannot do justice, by himself, to more than four or five children an hour. Production line practices of fifty an hour are useless and might as well be abandoned. School people should not ask a physician, no matter what the urgency, to do more than he can reasonably and ably do.

> . . . Routine school health examinations are not intended to result in definitive diagnosis. Rather they represent the examining physician's tentative evaluation of health status. Minor deviations, often not recorded, are noted only for future reference in relation to changes which may occur. Some defects such as enlarged tonsils, a diminution of hearing, minor skin infections, and other conditions that may be temporary are rechecked after an interval of a few days to a few weeks to determine whether or not they require treatment. This can more easily be done when the physician examining the child is the child's personal physician. In fact, the personal physician often knows the significance of these conditions at the time of examination because of his previous knowledge of the child. A major purpose of the school health examination is eventual correction of remediable defects, or educational adjustment to those that cannot be corrected. The examining physician is in a strategic position to encourage parents to follow through to an ultimate solution of the child's problem.[11]

4. Physicians should be paid for such services. Some schools believe that because it may be "good advertising" for physicians they should

[11] Joint Committee on Health Problems in Education, *op. cit.*, p. 40.

give their services free. Only in certain highly controlled situations is free examining service advisable. If there is no regularly employed school physician to perform these examinations then community personnel can be used but at a figure mutually agreeable.

In planning the remuneration many feel that, instead of paying on an individual examination basis or paying by the hour of service rendered, the school authorities could well discuss the whole problem with the physicians and contract for the total job. State laws and local ordinances should be consulted to determine whether employment of physicians and nurses for such purposes is legal.

5. Teachers, nurses, clerks, even students, should be assigned to help wherever possible with the examination. There is no use paying medical talent to record a vision figure on a record form. *Every facility should be provided to allow the physicians to perform their medical functions and to avoid delay in their work by doing something which a nonmedically trained person can do as well.*

6. Parents of elementary children should be present at examinations whenever possible. If such is not feasible, then conferences should be arranged later between parents, teachers, physician, and other counselors so that all will understand any problems which arise and a constructive program for the benefit of the pupil can be worked out.

7. The pupils, the ones examined, should be let in on the nature of meanings, findings, purpose, and general importance of the examination. Occasionally physicians will deem it wise to withhold some information from the examinee. That is the physician's business and prerogative. Generally speaking, however, physicians experienced in school examinations are finding it educationally useful to be communicative, helpful, and informing with the children. Strong points as well as weak should be noted. Children and parents should be told where and when normal development occurs. Certainly if their is a personal program of compensation for some existing disability to be worked out the child will need to know a great deal about his condition. To face his problem realistically and intelligently he will have to have a clear knowledge of the nature and prognosis of his handicap.

8. Likewise, cogent information must be made available in understandable form to school personnel. It is no longer reasonable to expect teachers to struggle to educate slow-moving children when their slowness is due to disease, defective hearing, or malnutrition and when, had such information been given the teacher, she would have handled

the children in a wholly different manner. Four of the five purposes cited for these appraisal tests are principally educational in outcome and require action from the educational personnel. Physicians and educators must arrange for a two-way transmission of information. Neither can safely withhold information from the other, else the child will be the loser. The teacher must have advice from medical personnel as the base from which school programs are to be modified, physicial education programs developed, compensations cultivated, and understandings about professional health services involved. These are educational purposes. The data from physical examinations are important to their attainment.

9. Such examinations as described require space, good lighting, good ventilation, and privacy. They should *not* be conducted in one end of a noisy gymnasium where the whole procedure might be open to public view. Preferably an examining or nurse's suite should be set aside in the building where children can move through a waiting room, dressing room, and examining room. In some communities the public attitude would disapprove of school medical personnel examining children unclothed. In such instances the removal of clothing to the waist would probably be acceptable.

FREQUENCY OF EXAMINATION

The frequency with which such examinations are given is important.

. . . The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, the National Conferences on Physicians and Schools, and the American Academy of Pediatrics have recommended a minimum of four medical examinations during the school career of the child. The suggested schedule calls for one examination just prior to entrance to school, one in the intermediate grades, one in junior high school or in early adolescence, and one before leaving high school. The frequency with which periodic examinations are performed must be determined locally on the basis of 1. the medical manpower available for the examination of well children; 2. the expected outcomes of the examination and 3. the degree of acceptance and support given to such examinations by the community.[12]

Or, in terms of priority, it has been recommended that:

Medical examinations might well be performed in the following order:

[12] *Ibid.*, p. 29.

1. Pupils who have returned to school without a medical certificate after prolonged or frequent absence.
2. Pupils referred by the school staff.
3. Pupils entering school for the first time.
4. Pupils leaving school before the next regularly scheduled health examination.
5. Pupils entering junior high school.
6. Pupils ready to graduate from senior high school.[13]

Motivation to Action

None of these appraisals is particularly significant unless action is taken in light of the findings. Children with cardiac disorders should avail themselves of public or private consultative and rehabilitative services. Children with diabetic, asthmatic, or orthopedic conditions need medical care. Children with speech or voice disorders or cleft palate need the aid of a speech corrective clinic or service. Some follow-up is necessary in most every case and yet actual experience shows considerable neglect of this. Shaffer says:

> It is common finding that people do not follow through on medical recommendations for chronic nonpainful disorders as readily as they do for acute conditions. How can we get people to follow through on advice about their health when they do not have the motivation of pain or fear? We do know that too often families do not understand the significance of the problem and they do not understand what needs to be done. They do not know where to find the recommended treatment; or, they either do not have the funds or are unwilling to pay for the diagnosis and treatments.
>
> It is becoming more and more apparent that education and understanding are the permanently motivating factors which govern behavior. Traditionally, fear of the consequences has been the most common device for motivating health attitudes and behavior. Perhaps we have overemphasized this emotion and the time has now come for developing the lasting understanding which comes from education.[14]

Examinations for Athletic Teams or for Physical Education Classes

Examinations for athletic teams or for physical education classes frequently vary sufficiently from all other examinations or observations as to warrant a classification by themselves. Whereas the physical examinations for all students may be given periodically, there is strong

[13] The Committee on Standards for School Health Services,
[14] Shaffer, *op. cit.*, p. 542.

opinion that school boy and girl athletes should have an examination prior to and at the end of every sport season. Certainly safest and most informed supervision can be given to athletes only when such seasonal examinations are made. It might not be necessary or worthwhile to give a complete examination to every athlete every season. Experienced team physicians will usually check over the heart, lungs, skin, and weight of competitors, examine for hernia, and inquire as to recent disease and illness or accident history. The question of eligibility of athletes as a result of this examination is discussed on page 305.

Classifying for physical education is a more general problem but none the less important. As has been discussed, a modern physical education program requires medical counsel to be fully effective. The physical education teacher is aware of the fact that not all children are fit for the normal vigorous program but that *all* children should have *some* program constructed for them. Such differentiation requires assistance from physicians. Furthermore, the physical education program itself offers opportunity for health development and health counseling, and both should go forward in light of the known condition of the student.

The plain fact of the matter, however, is that far less than half of the schools are in a position to supply such medical counsel for physical education or athletic purposes. There are not enough physicians employed or available to perform such services. Because of this, physical education teachers, including those who prepare competitive teams, have but two alternatives: to conduct their programs in ignorance of the health status of their charges or to do something themselves by way of screening. The latter seems altogether feasible, and Hixson has shown the excellent results obtainable by physical education teachers who are qualified to interpret a carefully arranged health history and to make certain observations of high school or college students. By Hixson's technique[15] the next best thing may be done, namely, athletes may be screened and physical education students classified without the immediate services of a physician.

Special Types of Examinations

Special examinations allow for a more careful analysis and diagnosis of the condition of a particular child. Neither the routine physical ex-

[15] C. G. Hixson of The Ohio State University, Columbus, Ohio. See the Appendix and the explanation given on p. 505.

amination nor any of the other three types of appraisals may give time enough or be penetrating enough to determine the true and complete state of affairs in the life of a child. The physician wants a "recall." The student is asked to come back to the examining office at a later date for a more leisurely and thorough examination during which more extensive clinical techniques may be used. Such an examination is ordinarily impossible in schools, where there are usually limited clinical facilities. It is more likely to occur in a clinic or the office of the family physician. In either event the data on the student which are important to school personnel should be returned to them so they will not work in the dark.

CONDITIONS BASIC TO THE SUCCESS OF APPRAISALS

Appraising the health of school pupils from kindergarten to college is complicated business. It involves many different people, is sometimes costly, requires cooperation of educators, physicians, nurses, and other professional personnel who may not be used to sharing responsibility and information, and, in the last analysis, *is of no value at all unless responsible parties, e.g., parents or teachers, act on the findings and produce results necessary for improved health or education.* If the appraisal and follow-up action were a simple one-man affair like reading a thermometer and firing a furnace if more heat is needed, then the conditions basic to success would be simple. Such is not the case, however.

There is no element of the school program quite as complicated and demanding of group cooperation as the area of health activities and instruction. To get the various kinds of teachers with their varied personal and professional backgrounds to work in understanding effectiveness with specialists; to get physicians, nurses, psychologists, physical educators, health teachers, administrators, as well as all the others —including most certainly parents—to seek a common goal, the good health of the child, and to work in mutual self-respect and effective relationship is the task to be accomplished. It can be done. It is easiest and best done when the following principles of conduct are observed:

1. *It must be realized by all concerned that the school is not in the practice of medicine.* It does not seek to supplant the family doctor. It does not operate a public clinic. It should make no effort to provide

free and thus competitive medical and surgical service to its clients. What it does it must justify on *educational* grounds and it is by now incontestable that the school, like the hospital, may inaugurate and conduct any service which will further the program of the institution. If children will be jeopardized by tuberculous teachers, the school has the moral right to require evidence of freedom from that disease. If the athletic program might be fatal to John Doe if he participates, the school must get John Doe examined to see if he may play. If progress in the public regard for health services can be made through education, the schools must *educate* about the nature of medicine, surgery, dentistry, and the related arts. There can be but need not be misunderstanding or friction on this point. The school is *not* in the practice of medicine; it is in the practice of education. Things which are done for and because of health considerations must be done in this light.

2. *No nonmedically trained person should ever, under any circumstances, make a diagnosis of any kind.* Teachers, nurses, principals, any of the nonmedical group, have neither the legal nor the moral right to label a health difficulty. It is obvious to all that they have not the knowledge or scientific understanding, and yet the temptation is great. The teacher sees a rash and she is tempted to label it "measles" and send it on. The coach sees a swollen knee and he may identify it as "water on the knee" and prescribe treatment. Such temptation must be resisted. If educators want the cooperation and good will of physicians to help in the development of a school health program they must realize that only the physician may and can diagnose. Diagnosis of health conditions is wholly a medical matter and there is no quicker way for overenthusiastic or presumptive teachers to ruin cooperative relationships than by pronouncing, implying, or recording a diagnosis of a condition.

The educator may observe and note symptoms, conditions, deviations from normal. He may describe in any words he has an observed condition. This is his job and a helpful one. He must not, however, tell a child or parent or anyone that "you have astigmatism, or diphtheria, or tuberculosis, or ringworm." There is a difference between observing deviations and piecing the signs together for a diagnosis. To make a differential diagnosis, i.e., to name a condition differentiated from all others including many similar conditions, requires great skill and much experience and can only be performed by a person trained to do it. It

may be a favorite but uncondoned pastime to figure out the ailments of the other fellow—we enjoy diagnosing our neighbor's trouble—but in school programs, on a professional level, nonmedical personnel should strictly abstain from any such practice. Their function is to observe, note, and refer or screen out. The actual labeling of the observation is a medical matter.

3. *Information about a given child must remain the confidential property of only the professional personnel concerned and the child and his guardian.* This is known as the *principle of privileged communication.* In the early days of school health work physicians looked with dismay upon the request of the educator for the results of the physical examinations of children. The physician had not been in the habit of giving any information about a patient to anyone save parents and other interested medical personnel. The privilege of communicating information was restricted to the patient and his physician. It was a restricted or privileged relationship, *and still is.*

The principle itself is as old as the confessional. It is observed by ministers, lawyers, and physicians and *must be observed by teachers if they wish to share in the confidential information possessed by physicians as a result of their examinations.* When one goes to his lawyer with a legal problem one knows that the secret will not be divulged without consent. The secrets of the confessional are not made common property. A physician does not violate the confidence of his patient. This is the operation of the principle of privileged communication.

Its place in the school health program is clear enough. No one should ever make public, or make the subject of common gossip, anything about the health status of a given child. If a teacher is told that one of her junior-high girls has dysmenorrhea which is affecting her work, her happiness, and her social life, the fact is no one's business except that of the professional personnel in a position to help the girl. The whole school staff need not know it. Other children need not know it. If a boy has 20/100 vision it is no one's business except that of his family, his teacher, his oculist, and himself. Teachers must learn *not* to gossip about what they know, *not* to pass on information to unauthorized, unconcerned, or irresponsible personnel. They should regard their students the way the physician regards them—as clients entitled to a high standard of professional treatment.

It is suggested that in the several situations where school health

programs are underdeveloped or are faltering because of misunderstandings or conflicts within the personnel the twin problems of "diagnosis" and "privileged communication" should be examined as probable causes of friction.

4. *The impact of the experience a student has with an appraisal test and the potential effect the discovery of something wrong may have upon him must be carefully evaluated.* Dr. Shaffer warns about this very clearly when he says:

> Take heed that there are some potential hazards in health appraisals which must be considered and evaluated. Are we making neurotic adults through hurried, impersonal examinations and thoughtless comments about physical characteristics which probably are normal? Is physical fitness overstressed so that children who are not in the upper percentiles for physique and strength are made to feel insecure and inadequate? Do we follow up sufficiently on children with *doubtful* physical findings to be sure that unwarranted fears about physical ailments are disspelled by complete examination?
>
> Many children are falsely labeled as cardiac patients; as having poor posture; as being too fat or thin; as having tonsils which need removal—when really they were within the range of normal—all because the examiners either did not know the ranges of normal growth and development or they did not take the time to explain to the child and his parents that some variation is normal. It is as important to reassure those who have no defects as it is to inform and instruct those who do for the psychological impact of an examination with prolonged special attention to certain organs or areas of the body can cause misunderstanding, anxiety and confusion.[16]

5. *Information from family physicians should be used whenever available.* There has been much discussion as to whether in a modern school health program there remains any place for the family doctor. Will the eventual development in the school become so complete that all necessary medical services will be had from school personnel? Neither the facts of child development nor the facts on the distribution of medical personnel make an affirmative answer possible. Family physicians, where they exist, have far too much information about their patients' health and development not to be included in the plans of the school program. Furthermore, it is highly unlikely that at any time in the next century there will be enough school physicians employed

[16] Shaffer, *op. cit.*, p. 543.

to perform the necessary services. In commenting on this problem, a medical-educational group has made this very wise observation.

> Health examination, whether a part of a periodic health appraisal, for participation in athletics or a follow-through on referral resulting from health observations and screening by parent, teacher, or nurse, holds greatest possibilities for effectiveness if performed in the office of the family physician. With his record of the child's medical history available and the necessary facilities at hand the family physician can complete a diagnostic examination and institute necessary therapeutic measures without delay. Under these conditions a greater proportion of children can receive needed therapeutic care more promptly than when examinations are conducted in the schools and an additional step is required before needed services can be instituted.[17]

It becomes necessary sometimes for school medical personnel to supplement the examination data of private physicians who may, in some places, be either disinterested or uninformed about the school program. In such instances the school should emphasize its purposes and arrange to get the data necessary to accomplish them.

If there is no family physician, the school has but two alternatives: to provide the appraisal and service itself or to arrange with some social or medical agency to get it done. It must be realized that there are thousands of children who have never had any medical attention through their families. (It is estimated that 42 percent of all rural children have never had any form of medical attention.) For these the school must stand *in loco parentis.* School personnel must initiate or carry on the health appraisal.

6. *The ultimate, the final authority on all matters affecting the school program and the relation of the child to it must, by the very nature of the situation, be centered in the school administration.* In no matter what kind of administrative situation, whether it be a hospital, a surgery, a school, a boys' camp, or a home, someone must make the decision, and *the one who has the responsibility for the program must have the authority for its proper execution.* This principle applied to the school health program has been stated as follows:

> As a matter of good administrative policy in all instances where a school physician is employed and charged with the responsibility of

[17] Bureau of Health Education, American Medical Association, Third National Conference on Physicians and Schools, 1951, p. 12.

supervising the health of the school children, the final decision on matters of school program modification shall be his. In instances of disagreement between the school and family physician an agreement should be attempted, but where such agreement fails to materialize, the recommendation of the school physician should prevail.

In a normal school year there will be many instances of variance in opinion. A family physician may approve a boy for competitive basketball whereas the physician serving the school does not. A family physician may recommend an excuse from physical education but school personnel may be of the opinion that the excuse is unwarranted and that an adapted program of physical education should be followed. The family physician may find no evidence of a heart disturbance which should limit a child's school activities, but the physician serving the school does. These variations in judgment are not frequent but they are not to be taken lightly. The child's health and welfare is at stake and it is only good sense that while the variations in judgment are being reconciled the student should remain *out* of the activity in question so as to avoid any possibility of injury. Eventually, however, a decision must be reached. The case must be disposed of and if no reconcilation of points of view can be had, then the educational personnel, the physician serving the school, the principal, the superintendent, whoever it is who has the responsibility for the school program, must have the final authority.

7. *The various kinds of appraisals must be conducted with whatever frequency is necessary to make them effective.* Obviously the continuous observation for illness should be made regularly and faithfully. Examinations for athletes should be seasonal, and special examinations should be scheduled whenever they appear to be necessary. The actual establishment of a schedule of appraisals would be feasible only in terms of local conditions. Just when and how often to schedule the various screen tests, the physical examinations, parent conferences, teacher-nurse conferences, and other elements associated with the program of appraisals could well be established by the School Health Council working in conjunction with the office of the Superintendent of Schools and the local medical society.

8. *Data from any of the five appraisal types should be recorded clearly, intelligently, and in a standard form.* They should be cumulative and made a part of the school record of the child to be available

only to professional personnel and parents. The health record should contain:

a. Data from the preschool examination
b. Findings and recommendations from the school physical examination
c. Findings and recommendations from any other school health appraisal
d. Communications with and summaries of conferences with parents, child, and school personnel
e. Chronological record of adjustment, corrections, developments pertaining to the child's health

The Wisconsin Cooperative School Health Program, typical perhaps of many state-wide modern programs, recommends the following for a complete system of health records:

DESCRIPTION OF RECORD FORM

A suggested health examination record is recommended so that the records of children transferring from one school to another or one community to another will be available for interpretation. The accompanying specimen form is correlated with the Teachers' Cumulative Health Guidance Record (developed as part of the Wisconsin Cooperative School Health Program) and endorsed by the School Health Committee of the Medical Society. It has two parts: one to be retained by the examining physician, and one to be forwarded to the school which the child attends. The form is perforated to facilitate separation of the two parts. One complete form is used for each examination. The part which the physician keeps in his office has space for:

1. Identifying data
2. Family history
3. Personal history
4. Recommendations to the home
5. Results of any special tests

Use of this first page is optional with the physician, for he may have his own preferred record system. It is included as a guide towards a complete examination. The part which the physician sends to the school includes:

1. Identifying data
2. Report of physical findings of significance to the school
3. Recommendations to the school
4. Recommendations to the home
5. Space for record of follow-through

It is important that the school receive part 2 with the physician's recommendations, as there are many health problems which demand readjustment of the school program to meet the needs of the individual child.

Supplementary Forms

In addition to a form for recording the results of the health examination, the following supplementary forms are suggested:

1. Letter to parents urging a health examination of the child by the family physician
2. Letter to accompany forms and records sent to the physician on request of parents
3. Letter to parents with form for requesting health examination at school
4. Form for inviting parents to health examination
5. Form for notifying parents of results of health examination and for follow-through report of family physician
6. Form for notifying parents of results of hearing and vision testing and for follow-through report of family physician
7. Teachers' Cumulative Health Guidance Record Form for individual boys and girls (refer to *Wisconsin Handbook on Health for the Elementary Teacher,* pp. 105–110)

Health Examination Records

Name Address
School Grade Date
Birthplace . . . Date of Birth . . . Sex . Race
Family History (if living, state present health; if deceased, cause of death)
Father Mother
Brothers Sisters
.
Record of Illness (check those which occurred at any time. * significant illness of past 5 years)

Frequent Colds .	Measles	Chorea
Influenza . .	Mumps . .	Heart Disease
Ear Infection	Whoop'g Cough .	Rheumatic Fever
Sinusitis	Scarlet Fever .	Bone & Joint Disease
Tonsillitis	Smallpox .	Asthma
Bronchitis	Poliomyclitis .	Hay Fever
Pneumonia	Typhoid Fever .	Hives
Tuberculosis	Appendicitis .	Skin Disease
Chickenpox	Hernia	Diabetes
Diphtheria . . .	Anemia .	Kidney Disease
Other: (Specify)		
.		

Contact with Tuberculosis
Tuberculin Test—Postitive Negative Date
Chest X-ray—fluoroscopic findings Date
Specific Immunization (record year)
Smallpox Whooping Cough Typhoid
Diphtheria Tetanus Other
Record of serious injuries and operations (record age)
Injuries Operations
Menstruation
Regular . Irregular . . Duration .. Severe
Do any of the following occur frequently? (Yes—No—Doubtful)

Aching eyes	Diarrhea
Blindness	Nausea
Blurred vision	Jaundice
Inflamed eyelids	Vomiting .
Recurring headache .	Constipation
Styes	Bed wetting
Color blind .	Heart and lungs
Deafness	Chest pain
Discharge from ears	Palpitations
Earache	Shortness of
Toothache	breath
Cough (prolonged)	Frequent urination
Hoarseness (prolonged)	Painful urination
Nasal discharge	Weight
(chronic)	Sudden gain
Nosebleed	Sudden loss
Sore throat	Fainting spells
Abdominal pains	Night sweats

Date of last dental examination or treatment
Date last attended by family physician Reason
.....

Health Examination

Fill in each space; use space at bottom for remarks. This half to be retained in physician's office.

General appearance	Heart
General nutrition	Murmurs
Posture	Enlargement
Height and weight	

Skin
 Scalp
 Interdigital
Eyes and Lids
 Vision without glasses R L
 Vision with glasses R L
 Other
Ears
 General condition R L
 Discharge R L
 Hearing R L
Nasopharynx
 Tonsils
 Nasal obstruction
Mouth
 Teeth
 Soft tissues
Thyroid
Lymph Glands
 Cervical
 Other
Breasts
Lungs

Blood Pressure
Pulse Rate
Abdomen
 General
Scars
Hernia
Genitalia
 Undescended testicle
 Atrophic testicle
 Abnormalities
Bones and Muscles
 Chest
 Spine
 Upper extremities
 Lower extremities
Nervous System
 Reflexes
Emotional Problems

Remarks:

Special Tests as Indicated

X-ray
Urine
 Albumin
 Specific gravity
 Sugar
 Microscopic
Blood
 Blood count
 Hemoglobin

REPORT TO SCHOOL OF SIGNIFICANT FINDINGS
OF HEALTH EXAMINATION
This half to be sent to the school.

Name of pupil School Grade.....
Name of parent Address
Physical findings which are of significance to the school:

Recommendations to the School:

Is pupil capable of carrying a full program of school work?	Yes	No
Should there be restrictions on up and down stairs travel?	Yes	No
Is special seating recommended?	Yes	No
Would special exercises help to improve posture?	Yes	No
Do you advise supplementary in-between meal feedings?	Yes	No
Does pupil have any irremediable defects?	Yes	No
Is there evidence of emotional upset?	Yes	No

Remarks:

Classification for Physical Education Activity. Record roman numerals as indicated below

Code:
I. Unlimited activity
II. Slightly modified—under observation
III. Definitely restricted—i.e., cardiac disease, post acute infectious diseases, potential chests, etc.
IV. Individual physical education
V. Rest

Recommendations for the Home (to be used as basis for school-home contact):

Is the present food intake adequate?	Yes	No
If not, what changes are advised?		
Is more rest needed?	Yes	No
Do you recommend curtailment of extra-curricular activities?	Yes	No
Should work at home be restricted?	Yes	No
Should work permit be issued for pupil, if requested?	Yes	No

Remarks: (Please indicate also any specific need for dental, psychiatric, medical or surgical care.)
Date: . . . Signature of Examining Physician
Report of Follow-up: (To be filled out by school personnel—please be specific.)[18]

Another fine example of the use of records by the teachers and school nurse is described by Maud Brown:

In this school system individualization had been developed to such a degree that a personal folder follows each pupil from kindergarten to high school. In the year of the beginning of the present health program, the first folders started in kindergarten had reached first year high school. It was a vehicle providentially at hand for the addition of, or rounding out of, records of physical health.

These folders in the elementary schools are kept in the desks of the classroom teacher where they are in constant use. In the junior and senior high schools, they are filed in administrative offices, readily accessible. At present the data routinely included are:

a. Cumulative health records carrying personal information from the kindergarten through the high school. Upon this form the findings of the medical examinations are recorded and all notations by physician, dentist, nurse, teachers, and social workers are transcribed in condensed form. Emotional health is included and sufficient information regarding school progress to give a picture of the child as a functional unit.

b. All records, scholastic, social, and physical, other than those contained in the cumulative health records.

c. Copies of teachers' letters to parents, parents' notes to the school, and notations regarding conferences with parents or others concerning the pupil.

d. The teacher's yearly informal summarizing reports of the child.

The Nurse-Teacher Work Sheets—The implementing instrument for utilizing this fund of information about the child is the nurse-teacher work sheet. This is a detailed form upon which are checked for each pupil the specific goals for health improvement toward which the efforts of teacher and nurse are to be directed. It is doubtful if dissipation of effort can be prevented without the focus that a common work sheet gives. At the end of every school year the year's health history as recorded on the work sheet is summarized and entered on the cumulative record. At the beginning of

[18] *School Health Examinations,* Revised Edition, Wisconsin Cooperative School Health Program, State Medical Society of Wisconsin, Madison, 1951.

his next school year, new ones are prepared for the continuation of combined effort toward specific improvements. It is only as a result of itemized efforts that the cumulative result of improved general health can be achieved and the child's total condition raised progressively nearer and nearer the optimal.

After the first year's use of the nurse-teacher work sheet a plan was worked out obviating the duplication for the teachers of this work sheet and the personal record already routinely kept by the teachers. The plan has proved satisfactory to all concerned.[19]

Although it is not possible here to reproduce entirely the parent inventory used in San Francisco and referred to on page 87 several of the significant questions will be shown to give an idea of the sort of help parents can give:

San Francisco Department of Public Health — HEALTH INVENTORY For Elementary School — San Francisco Unified School District

I. Pupil's Name Sex Birth Date
Address Phone No.
Father's Name Mother's Name
Employer's Address
Employer's Telephone No.
In case of accident, this information will assist the school principal in notifying parents.
How many members in immediate family? Mother Father Brothers Sisters Others
Does this child live at home with Mother, Father; if not, with whom is child living? , give relationship

II. Past illness (Please check those which your child has had)

measles	scarlet fever	heart disease
whooping cough	diphtheria	chorea (St. Vitus dance)
infantile paralysis	smallpox	epilepsy (convulsions)
rheumatic fever	diabetes	

Please tell any other serious illness, operation or injury, and age when incurred:

[19] Maud A. Brown, "A Coordinated School Health Program," *American Journal of Public Health*, November, 1944, p. 1142.

III. Has your child been vaccinated against smallpox? No . . , Yes . .
Does he/she have a scar? Yes . . , No . . What was the date when he/she was last vaccinated?
Has your child been immunized against diphtheria? No. . . ., Yes . ., Year
Has he/she been reimmunized (booster protection)? No. . . , Yes. . . , Year . . .

IV. Has your child ever been around anyone known to have tuberculosis? No , Yes Year
Has he/she ever had a skin test for tuberculosis? No , Yes . , Year
Do you know if the test was: positive , negative ? Has he/she had an X-ray of the chest? No . . , Yes , Year Where was the X-Ray taken?

V. Please check any of the following symptoms which have been noted recently:

. . 4 or more colds each year	. . . dizziness	. running ears
. . . frequent sore throat	. fainting spells	. . hard of hearing
. frequent headaches	. . . abdominal pain	. frequent nose-bleed
. . blurred vision	. . frequent urination	. . . night sweats
. . frequent styes	. allergy	. tires easily
. . frequent pains in legs or joints	speech difficulty	. . hernia (rupture)

VI. Information which will help you, the school staff and physician understand your child better. Please check which of the following you observe in your child:

. . . nail biting	. becomes discouraged easily	selfish
. thumb sucking	. . . worries a great deal	. excitable
. . . bed wetting	. . . has many fears	. angers easily
. . shy		. . . suspicious
. . . happy disposition	. . is self-reliant	. . . very easy to manage
. . . orderly	dependable	 thoughtful of family members
. . . helpful around home	jealous	
	likes to play with	

. . . . has many friends
. . . . is a leader
. . . has few friends
. . . . prefers to be alone
. . . others
. . . resentful
. . . is generous with playmates
. . would rather read or study than play
. . likes to go to school
. . other

.

.

IX. Do you take your child to a private physician? No , Yes
What is his/her name?
How often do you take your child to him/her?
Do you take your child to a clinic? No , Yes
Which clinic? How often?
For what *reason* and *when* did you last take your child to a private physician or clinic?
Date
Do you take your child to a private dentist? No , Yes
What is his name?
How often does your child visit him?
Do you take your child to a dental clinic? No , Yes
Which clinic? How often?

.

Are there any problems or other matters which you would like to discuss with the school staff (physician, teacher, nurse, other)?

.

.

DATE Parent's signature

9. *Appraisal services can only be as good as the action in terms of child betterment which they may stimulate.* No physical examination is completely worthwhile unless adequate counseling and remedial or compensatory services follow it. The ultimate criterion by which to judge the value of any examination or observation program is "Has it produced results in improved child life?" Techniques by which the information found in the appraisal activities can be translated into action necessary for the good of the child can best be seen by first noting the variety of actions which may be taken to help a child. These may be either educational or medical. If they are medical they will include medical treatment, surgery, diet, therapy, the use of appliances (like glasses, braces, hearing aids), orthopedic exercises, dentistry, immunization. If these are available they are applied as the

case may warrant. If educational action is indicated by the data, then psychological counseling, social adjustment counseling, modification of study program, alteration of school environment, special classification in physical education, parental assistance, special educational devices (e.g., sight-saving equipment) should be available for use. Which direction does the action take?

THE NEEDS OF THE CHILD

Answered educationally by:	*Answered medically by:*
Psychological counseling	Medical treatment
Social adjustment counseling	Surgery
Parental assistance	Diet therapy
Modified school program	Appliances
Altered environment	Orthopedics
Special physical education	Dentistry
Educational services	Immunization

The answer will depend upon the exercise of the skilled judgment of physician, nurse, and educator, upon the willingness and ability of parents or guardians to see the proper action taken, and upon the facilities and services available in the school and community.

The course to take can be arrived at by conferences. As Wilson says:

> Regardless of the frequency or quality of examinations or of the variety of procedures used in appraising the condition of pupils, the best possible results cannot be attained unless some person is given responsibility for health counseling, and has adequate time to spend on this important phase of health service. Written notices to parents concerning conditions found and requiring attention bring limited results because of their impersonal nature, their lack of motivating power, and their inability to give parents the information they desire. Written notices need to be augmented by personal conferences with students and their parents—a procedure which we describe as counseling. Counseling provides parents with opportunities to secure information and it helps parents to plan a program of action. Counseling is the step between finding a condition that needs attention and securing that attention.[20]

A beginning can well be made with a conference between physician, parent, and child. This is perhaps the most important conference of

[20] C. C. Wilson, "The School Health Examination," *Journal of School Health*, XVII (1947), 246.

all, and if parents will but heed the advice of physicians serving the school or their own family physicians, much of the difficulty which is remediable in childhood will be cleared up. Parents should come to the school to confer with the physician about their children. Successful follow-up of examinations means action, and action can be had medically only with parents' approval and cooperation and educationally only with their cooperation and understanding. As the Wisconsin Cooperative Health Program indicates:

In some cases the follow-through after examinations is lacking because parents are not convinced of the importance of investing further funds in the medical and dental care of their children.

In the rush of school activities there is a tendency to report significant findings to parents and then to drop the matter unless the need is so great that the child's immediate health is endangered. To avoid the neglect of follow-through work, it is recommended that the following procedures be adopted:

1. Teacher-nurse consultation: Immediately after examinations have been conducted and significant findings reported, all records should be carefully examined and discussed by the nurse and teacher. Cases which require special medical attention should be tabbed on the teacher's Health Guidance Record Form to facilitate follow-through work. Cases which require a modification of the school program without particular medical care should likewise be tabbed so that the teacher can make sure that recommendations of the physicians are carried out as intended.

2. Teacher-nurse-parent conference: In cases which indicate the need of specialized medical care, it is desirable to have the public health nurse, teacher and parents discuss the educational implications of the health examination and the recommendations of the physician. In communities where this work cannot be done by a public health nurse, the teacher can and should assume the responsibility. Whenever possible, it would be well to have the parents visit the school to review the findings of the health examination with the teacher and the nurse. Adequate time should be taken for these conferences. They should not be done informally while parents and teachers are standing around after a meeting of the Parent-Teacher Association.

3. Home visits: In cases where the parent does not respond to the invitation to visit the school for the purpose of discussing the health examination with the teacher and nurse, either the nurse or teacher should assume the responsibility of visiting the home to explain the findings and urge continued parental action.

4. Teacher follow-through: When the recommendations do not involve specific medical care, but rather, an adjustment of the school program to fit the needs of the individual child, the follow-through can best be done by the teacher.

5. Special cases: Often the recommendation of the physician indicates the need for glasses or special equipment necessitating expenditures on the part of the parent. When the needs of the child are adequately interpreted to the parent, there is usually the desired cooperation, but occasionally parental neglect or poor economic circumstances indicate the need for financial assistance through some other source. If experience in the community indicates such a need, the school authorities and public health nurse should be in a position to know where assistance can be obtained without publicity which would embarrass the child.

10. *All such appraisals as have been described in this chapter should be subject to a continuous process of evaluation.* Experience with them indicates clearly that some of them, under certain conditions may not be as effectual as wished, cost more money than they are worth in terms of children served, or cost more in time and effort than they are worth.

These questions need to be asked of all examining programs: "Are the traditional purposes of a periodic medical examination (to detect adverse conditions, to advise concerning the need for care, and to educate parent and child) realistic today? How necessary is periodic examination of the entire school population for detecting adverse conditions? How frequently should medical examinations be performed to achieve their stated purposes? What is the annual increment of adverse conditions detectable only by medical examination? How many conditions detected by the medical school examination are already under care?"[21]

For example, Drs. Alfred Yankauer and Ruth Lawrence have checked the effectiveness of several thousand school medical examinations in New York State and some of their results are as follows:

From the data presented in the first report of this study it was possible to conclude that the routine examination of an entire first grade (*all of whom had been examined the previous year in kindergarten*) was of little value from a case-finding point of view. Data presented in this report appear to permit extension of this conclusion through the fourth grade. Al-

[21] New York Studies Role of School Medical Examinations, "School Health Practices. . . ." *Public Health Reports*, LXX, No. 2 (February, 1955), 186–187.

though 14 percent of the 901 children followed developed new adverse conditions which had not been present at their first-grade examination, less than 4 percent of them developed conditions which were neither receiving medical care nor known to the school at the time of their subsequent periodic examination. Of the 34 children whose new conditions were neither known nor under care, only nine had developed conditions which could not have been discovered by some means other than the performance of 2,263 medical examinations.

Continuing to focus upon the case-finding aspects of the data presented, two additional findings merit comment. The yield of children with new adverse conditions from the second-grade examination was almost twice as great as the yield in the fourth grade.

A group of 901 first-grade school children representing a cross-section of the school population of Rochester, New York, were followed with unusually careful annual medical examinations for a period of one to three years, 704 of the children being followed for three years. Of the children followed, 14 percent developed new adverse conditions that had not been present at their base line examination in the first grade. Almost half of these new conditions were already under medical care at the time of the periodic medical examination and an additional 25 percent were already known to the school health service, although not under care.

Of the 40 new adverse conditions neither known nor under care at the time of the periodic medical examination, all but nine could have been discovered by means other than the performance of a medical examination. The 2,263 medical examinations performed gave a case-finding yield of one child per 251 examinations.[22]

And in his study of "Remediability of Certain Kinds of Defects" Yankauer and his associates conclude that:

Almost two-thirds of the conditions present in the first grade were still present in the fourth grade. The increment of new adverse conditions between the first and fourth grade exceeded the number corrected so that relatively more adverse conditions were present at the end of the follow-up period than at its beginning.

One hundred and sixty-nine adverse conditions present for one or more years and thoroughly discussed with and explained to parents are analyzed

[22] Alfred Yankauer and Ruth Lawrence, "A Study of Periodic School Medical Examinations, II, The Annual Increment of New 'Defects,'" *American Journal of Public Health and the Nation's Health*, XLVI, No. 12 (December, 1956), 1553. Copyrighted by The American Public Health Association, Inc.

in somewhat more detail. Four-fifths of these conditions were under medical care at the time of examination in the fourth grade. Parental failure to seek care accounted for most of the conditions not under care. A high proportion of uncared for conditions were emotional disorders.

These 169 adverse conditions were classified in terms of degree of remediability and severity of handicap. Over half of these were considered to be only slightly or insignificantly handicapping and less than one-third were considered to be completely remediable. Thus it is to be expected that many of the "defects" found among school children will persist in spite of treatment. Parents were more apt to seek medical care for severely handicapping conditions and for conditions with a predominantly somatic rather than psychic basis.

In this group of 617 children about one child in eight had a moderately to severely handicapping condition. It is suggested that school medical personnel could profitably concentrate attention upon this group, interpreting their needs to school staff and assisting the small proportion of them not under medical care to obtain such care.[23]

And, of course, the physical examination is not the only appraisal to need constant evaluation. The screening tests using nonmedical personnel are susceptible to ineffectiveness, dependent as they are upon personnel not primarily trained for their job and working with tests which are not finely diagnostic or definitive. Bronson Price suggests a way to evaluate these:

All of the investigators concerned with the problem have recognized that the findings of a screen should be checked against some kind of a criterion, such as the findings of a physician who is specially trained in diagnosing the functions which the screen is supposed to measure.

Too often, however, an investigator has administered a screen to a group of children, and has asked the specialist physician to examine only those children who failed the screen. The children passing the screen have been ignored, along with the possibility that they may have included many children who, if examined by the specialist, would have been found to need quite as much attention as the cases selected by the screen.[24]

[23] Alfred Yankauer, Ruth Lawrence, and Lillian Ballou, "A Study of Periodic School Medical Examinations, III. The Remediability of Certain Categories of 'Defects,'" *American Journal of Public Health and the Nation's Health*, XLVII, No. 11 (November, 1957), 1421.

[24] Bronson Price, *School Health Services*, U.S. Department of Health, Education and Welfare, Social Security Administration, Children's Bureau, 1957, p. 100.

Evaluation studies such as these mentioned are of continuing importance. School health councils, school administrators, and health coordinators need be aware of the important city and state evaluative surveys that are available.

SELECTED READINGS

In addition to the footnoted references, the following material will provide authoritative suggestions and material on the appraisal program and its setting within the context of the total program of school health services:

Articles

American Public Health Association, School Health Section, "Suggested Standards for Health Services in Secondary Schools," *American Journal of Public Health Yearbook, 1951–52,* May, 1952, p. 139.

Baumgartner, Leona, M.D., "Better Health for School Age Children," *The Child,* August–September, 1950, pp. 2, 3, 4, 5.

Brooks, Charlotte Singer, "Of What Value Are Health Inventories Filled Out by Parents?" *American Journal of Public Health,* June, 1952, p. 661.

Culbert, Robert W., and Jacobziner, Harold, "What Does the School Physician See?" *American Journal of Public Health,* May, 1950, pp. 567–564.

Davens, Edward, "Screening for Defects Among School Children," *Journal of Chronic Diseases,* II (1955), 409–417.

Deisher, Robert W., "The Value of the Wetzel Grid in a School Health Program and Problems Related to Its Use," *Journal of School Health,* February, 1952, p. 44.

Dukelow, Donald A., "Multiphasic Screening in the School Health Service Program," *Journal of School Health* XXVI (1956), 54–57.

Jacobziner, Harold, "The Astoria Plan: A Decade of Progress," *Journal of Pediatrics,* XXXVIII (1951), 221–230.

Leeson, Helen J., McHenry, Earle W., and Mosley, William, "The Value of the Wetzel Grid in the Examination of School Children," *Canadian Journal of Public Health,* October, 1947, pp. 491–495.

Mann, Arvin W., *et al.*, "The Red Graph and the Wetzel Grid as Methods of Determining the Symmetry of Status and Progress During Growth," *Journal of Pediatrics,* February, 1948, pp. 137–150.

Meredith, Howard V., "A Physical Growth Record for Use in Elementary and High Schools," *American Journal of Public Health,* July, 1949, pp. 878–885.

Shaffer, Thomas E., "Health Services School Children Need," *Journal of the American Medical Association* CLXVI (1958), 1698–1700.

Shaffer, Thomas E., "What Health Services Do School Age Children Need?" *Journal of the American Association for Health, Physical Education and Recreation,* June, 1952, p. 16.

"The Annual School Health Examination–An Archaic Anomaly," *American Journal of Public Health,* April, 1951, p. 448.

Wetzel, Norman C., "Assessing the Physical Condition of Children, I, Case Demonstration of Failing Growth and Determination of 'Par' by Grid Method," *Journal of Pediatrics,* January, 1943, pp. 82–111; "II, Simple Malnutrition: A Problem of Failing Growth and Development," February, 1943, pp. 208–225; "III, The Components of Physical Studies and Physical Progress and Their Evaluation," March, 1943, pp. 329–361.

Wetzel, Norman C., "The Simultaneous Screening and Assessment of School Children," *Journal of Health and Physical Education,* December, 1942, pp. 576–577.

Yankauer, Alfred, Jr., "A Further Evaluation of the Astoria Plan of School Medical Services in New York City Elementary Schools," *American Journal of Public Health,* April, 1951, p. 383.

Yankauer, Alfred, and Lawrence, Ruth A., "A Study of Periodic School Medical Examinations, I, Methodology and Initial Findings," *American Journal of Public Health,* XLV (1955), 71–78.

BOOKS AND REPORTS

Anderson, C. L., *School Health Practice,* St. Louis, Mosby, 1960.

Clearing House for Research in Child Life, *Research Relating to Children,* Washington, D.C., Children's Bureau, Social Security Administration, Department of Health, Education and Welfare, 1950.

Committee on School Health, *Priorities in Health Services for Children of School Age,* Washington, D.C., Children's Bureau, Office of Education, Public Health Service, Department of Health, Education and Welfare, 1950.

Health Services for Children of School Age, Working Group on Service Programs of the Public Health Conference on Records and Statistics, *Public Health Reports,* LXXI, No. 9 (September, 1956), 917.

Joint Committee on Health Problems in Education, N.E.A. and American Medical Association, *School Health Services,* Washington, D.C., and Chicago, 1953.

National Conference for Cooperation in Health Education, *Suggested School Health Policies,* Third Edition, Washington, D.C., N.E.A., 1956.

Price, Bronson, "School Health Services," *Children's Bureau Publication No. 362,* Washington, D.C., Department of Health, Education and Welfare, U.S. Government Printing Office, 1957.

Rogers, J. F., "What Every Teacher Should Know About the Physical Condition of Her Pupils," *Pamphlet No. 68,* Revised, Washington, D.C., U.S. Office of Education.

Schneider, Elsa, and McNeely, Simon A., "Teachers Contribute to Child Health," *Bulletin No. 8,* Washington, D.C., U.S. Office of Education, U.S. Government Printing Office, 1951.

Wheatley, G. M., and Hallock, Grace T., *Health Observation of School Children,* Second Edition, New York, McGraw-Hill, 1956.

— 11 —

School Controls for Disease

For many reasons schools and colleges are morally obligated to exert every effort to prevent the occurrence of disease among their populations. Parents have every right to expect that their children will be returned home each day no less well than when they left in the morning. If influences are at work in the school which produce disease in children, then the school is, in a moral sense, liable for this failure to provide precautions which would have protected the child.

There is, in the minds of some critics of today's schools, a serious doubt as to the wisdom of sending children to school at the tender age of six. Perhaps from a health standpoint they would be better off remaining at home and in the communities until sixteen. Perhaps to confine children by compulsory attendance laws to crowded, badly arranged schools, where they become exposed to all manner of diseases from which some die and many are permanently disabled, is basically a disservice. Maybe children are simply not ready physiologically or psychologically for the arduous and crowded life of school. Maybe their protective mechanisms are not yet sufficiently developed to withstand the strain of frequent and intense exposures which children get in school. Certainly, if the law requires attendance then every school should have a disease control program just as it is required to have a fire control program.

That point of view—critical though it may be—cannot be ignored completely. The school environment may be, and most frequently is, conducive to transmission of diseases of nearly all communicable kinds. Children are exposed. Many are handicapped who, had they not been compelled to attend, would not have been. Parents know this and

parents expect the school authorities to give children every protection against communicable disease. The school that operates under the authority of the compulsory attendance laws and does not accept its obligation to protect its children against the disasters of, say, diphtheria or tuberculosis is more than remiss; it is culpable.

What kinds of diseases afflict the school population? What exposures may a child meet? There are four principal kinds:

1. The respiratory group, including the familiar cold, mumps, measles, diphtheria, smallpox, chicken pox, and many others.
2. Those entering through the skin or membranes, including impetigo, venereal diseases, pediculosis, ringworm, itch, and others transmitted some by microscopic organisms and others by insects as large as lice and ticks.
3. The gastrointestinal diseases, including typhoid fever, food poisoning, and dysentery acquired by ingesting contaminated food or water.
4. All others of less certain origin and presenting special problems, such as heart disease, rheumatic fever, muscular dystrophy and others.

One or more of these diseases is constantly present, usually in epidemic form, somewhere in the schools of the land. They are present as causes of illness and absence and sometimes disability and death. Among them are some of the greatest killers the world knows, like rheumatic fever. Some merely cause inconvenience and retard learning. Because they are ever present they require the establishment of policies and procedures to meet them.

BASIC POLICIES FOR CONTROL

There are several basic policies concerning the control and prevention of disease which should be familiar to everyone in education. These policies should serve as the basis for specific controls to be put in effect in every school. They should be understood and approved by boards of education and then made the subject for discussion at faculty meetings so that all personnel will be guided accordingly. All parents should be aware of them and children should also understand that these policies are for their protection. They are as follows:

1. Principals and superintendents should have accurate and authoritative information concerning the legal status of vaccination and immu-

nization in their state. State laws vary. Some require vaccination for smallpox as a condition of entrance. Others do not. There are at least six variations of vaccination laws throughout the states, and administrators can go only as far as the state law permits.[1] If a school desires to make satisfactory evidence of protection against smallpox and diphtheria a condition of entrance, the right to do so must be established in law or in opinions of attorneys general.

2. The practice of rewarding continuous attendance is not compatible with best protection against disease and should be discontinued. Infected pupils frequently are sent to school for the sake of maintaining some kind of attendance record and, thus, they expose others to the disease. Absences should be encouraged when children are ill. In localities where schools must rely upon average daily attendance for financial support from the state a real problem is presented. Absences for any reason mean loss of revenue; attendance, however, may well mean more absences, and perhaps epidemics. In no instance should the school encourage attendance of a sick child—not only for his sake but for the sake of others who may be exposed to some communicable disease.

3. No communicable disease program can be fully effective without the cooperation of parents. Schools should make every effort to acquaint parents with the disease problem and to seek their active participation in the program to control disease.

4. Responsibility for the administration of quarantine and other control measures is vested by law in the public board of health, but many detailed procedures may need to be carried out by school authorities and personnel in cooperation with the board of health.

5. Home supervision of communicable diseases is necessarily carried out by the board of health. Therefore, close cooperation must be established by school authorities with the board of health in order to coordinate home and school procedures.

6. Whenever public schools administer their own communicable disease measures and private and parochial schools are served in similar capacity by the board of health, the program must be consistent and well coordinated to avoid community confusion, lack of cooperation, and resentments based upon real or fancied discriminations.

7. If the communicable disease program is administered by the board of health, it must be carefully coordinated with school schedules and the

[1] *Journal of the American Medical Association,* January 29, 1944, p. 300.

operations of school plants, and there must be opportunities for classroom teachers to familiarize themselves with communicable disease control procedures and with their duties in relation thereto.[2]

Plans for the administration of such policies vary. In some communities the board of health or health department assumes responsibility for all school health services including, of course, the control of communicable diseases. In such instances the effective operation of the above policies is the obligation of the health department, which usually seeks and gets the active cooperation of the educational authorities.

In other instances the school authorities have employed medical personnel who effectively operate disease control procedures in accordance with the regulations of the board of health; and in still a third pattern the matter of disease control becomes a joint responsibility.

As an example of a cooperative policy established at the official state level the following is offered:

To School Administrators and Health Officials

The problem of communicable disease control in our school population is constantly facing school administrators and health departments. For the prevention of spread of communicable diseases to be effective, it requires cooperation of the school authorities and the health department. Therefore, the Ohio Departments of Education and Health recommend a program of control be formulated between local health departments and school administrators, patterned after the following:

a. The policy of closing the schools to be established in conference between the school administrator and the responsible health authority.
b. Health Department—To be responsible for (1) isolation of all known cases and carriers of infection; (2) organization of observation procedures for student bodies exposed; and (3) professional relationships necessary to carry out the program.
c. School Authorities—To be responsible for (1) making the student body available for observation procedures necessary to control the spread of infection; and (2) keeping the parents and community informed as to steps being taken to protect the school population from the spread of disease.

Such a program would insure the application of the latest control procedures, giving maximum protection against the spread of infection; would

[2] *Health in Schools*, Twentieth Yearbook of the American Association of School Administrators, National Education Association, 1951, p. 347.

keep the possibility of closing schools to a minimum; and would insure parent and public cooperation, in the knowledge that well-planned and implemented control procedures were being followed.

It is further urged that local authorities call upon the state departments for the specialized and technical help that is available for their consultation.

Clyde Hissong, Ph.D.
State Superintendent of Public Instruction
John D. Porterfield, M.D.
Director of Health. 1948

SPECIFIC PROCEDURES IN DISEASE CONTROL

Eventually any good program of disease control must come down to dealing with specific children who have or have had a disease or who may be exposed to one. There are, of course, many things a school can do by way of maintaining standards of sanitation, ventilation, and safety, and these will be mentioned in appropriate chapters later. But to control the diseases as they occur or to prevent them before they occur requires a chain of procedures involving, in this order: immunization, case finding, isolation and exclusion, notification of parents and others, referrals to medical care, and readmission. Programs of immunization remain as about the only concrete way to prevent specific diseases in specific people. These procedures then are recommended as follows:

Immunization Programs

The first step in any school effort to control communicable disease is to mobilize the forces within the community to prevent the occurrence of these diseases. This involves not only an educational program directed at children and parents to bring them into a receptive attitude toward such preventive measures but also requires agreement upon and development of programs of action regarding the specific diseases. In view of the fact that science is constantly making progress in the control and prevention of these diseases, it behooves school authorities to avail themselves of the best current opinion and practice in their administration. Schools should consult local medical authorities about the utility, safety, and wisdom of every immunization procedure used.

Medical opinion of the day indicates that most of the immunizing that is to be done should be done before the child reaches school. If it is not done before entrance then the school should maintain pro-

cedures which will accomplish immunization against these diseases in at least 80 percent of the school population. These procedures will include a history record for case-finding purposes and advice to all unimmunized children concerning the merits of protection. Parents should be urged to take their children to their own physician for immunization, and a record of such protection should be on file at the school. Many schools are today arranging for immunization at the school and as part of the school health education program. Children are being invited to avail themselves of this service at minimal cost (or free, in some instances). When this is done at the school written requests from parents must be had and the entire procedure must be placed in the hands of highly competent medical personnel.

However, some school systems do not sponsor the original or primary immunizations under the jurisdiction of the school. They may administer booster shots but they operate under the principle that the original immunizations should not wait until entrance to school. By declining to provide such service the school encourages parents to use the services of private physicians or clinics.

As of this writing preventive treatment is available for smallpox, diphtheria, whooping cough (pertussis), tetanus, and poliomyelitis. These five have become so well established that some states are requiring evidence of successful vaccination against these as a condition of entrance to school (Ohio, Indiana, and others). The Indiana law requires official evidence of number of children vaccinated and not vaccinated grade by grade in school in every county of the state. Allowance is made, as is customary, for those parents who will place in writing a conscientious objection to such preventive treatment.

Case-Finding

The finding of a case of communicable disease begins at home with the parents. If parents would keep those children at home who show signs of fever, watery eyes, inflamed membranes and indisposition pending a diagnosis, there would be less communicable disease spread through the school. In Chapter 10 we have presented some procedures for bus drivers and homeroom teachers to follow. Children with signs of disease should be isolated from others immediately and either sent home or placed in a separate quarantine room to await a medical diagnosis of their condition. School nurses, visiting teachers, and others

should work with parents to give them the understanding of the value of this procedure and the technique of doing their own case finding. Pain, fever, cough, sore throat, rash, nausea, vomiting, lassitude, and pallor are suspicious signs. Teachers, nurses, parents, administrators should all be on the lookout for them and, when they see them, know what to do to remove the child from association with others. This is case finding at the simplest level.

At the next level are to be found the case-finding techniques used by a competent physician, perhaps a child specialist, as he reads and interprets the signs of growth and development during a physical examination. Some of these also are discussed in Chapter 10. Here careful readings can be made and diagnoses given leading, in the appropriate instances, to the prevention and control of communicable as well as other diseases. Occasionally, physicians serving in school health education programs recommend special case-finding procedures involving laboratory tests. These are unusual but necessary in some cases in order to facilitate growth or prevent illness. The school administration must be familiar with community facilities and other means for accomplishing these purposes.

Isolation and Exclusion

As has been said, the next step after case finding is isolation and, if warranted, exclusion from school. In the procedures for the morning observation it was suggested that each school should have an excluding authority (the nurse, the principal, or some other person of careful judgment) who can receive the children with suspicious signs from the room teachers and isolate them long enough for a judgment to be made. If it is deemed wise to exclude the child, then steps must be taken to see that he is safely delivered home. This procedure may break down if (1) no one is at home to receive the child, (2) parents do not want their children sent home, (3) no transportation is available (sick children should *not* be sent home alone). In schools where those situations may prevail to spoil the practice of excluding without waiting for diagnosis or consent, the school should insist with parents that other homes or places be designated to receive their children if such is necessary. Transportation must be arranged by either the parent, the school, or some other means. The practice of sending children home for illness should not be abandoned for want of means of getting them there.

School authorities, including all teachers, should be kept abreast of the latest and best practices among public health personnel in connection with the control of the so-called "children's diseases." Practices which were in vogue twenty years ago no longer obtain today and changes are occurring from time to time in the administration of disease control measures. For example, in New Haven, Connecticut, the health officers and private physicians are actually recommending that children be allowed to have four of these diseases: measles, German measles, mumps, and chicken pox. It has been shown that the mortality from them in childhood is nil; they do attack severely older people, quarantine and isolation are ineffective, and thus if active immunity can be built from the diseases themselves such is being recommended.

In any event, school policy and practice must be geared completely and cooperatively with those of the health department.

Notification

Immediately the decision to exclude is reached, machinery should be set in motion to notify several other people. First, of course, is the parent. The home should be called or in some other way it should be verified that the child will be received when he gets there. The first responsibility for caring for the child and receiving him lies with the parents. The parent should then be advised to call the family physician where there is one.

Second, the excluding authority, the school physician, nurse, or some other carefully picked person, should notify the room teacher and the room teachers who have brothers and sisters of the child. These latter should be scrutinized carefully for similar suspicious signs.

Third, the local health authorities should be notified at once of any child excluded because of signs which may indicate a communicable disease. All of these routines must be in accordance with the regulations of local boards of health and thoroughly understood by all persons concerned. Each exclusion will also be reported to the school office.

Referrals

What parents do with children suspected of having infectious diseases is largely a private matter. The school has accomplished its purpose when it has broken the contact between the child and other children in school. Certainly they should at least report the case to local health

authorities and be visited, perhaps, by a public health nurse. Many parents, however, have no physician and never heard of the local health authorities. The school authorities should be ready in any case to refer parents to physicians in their neighborhood or to the information bureau of the local medical society; or to refer them to the local public health nursing office and the local health office; or to refer parents to local social agencies or health agencies which can arrange for medical care in cases of indigence. These three referrals are important and each school should be prepared to make them where necessary. Where school physicians or nurses are employed they will be prepared to discuss the case with family physicians and local authorities.

Readmission

Procedures for readmitting a child after illness must be worked out by the school authorities in conjunction with public health officials and in full accord with local and state public health law. Practices vary. In any event it is important to determine: (1) Is it safe for the child to return to school? and (2) Is it safe for other children to have the child back? Some such procedures as these are recommended:

1. Pupils who have been quarantined by the health department may be readmitted by certificate from the health department.
2. Pupils who have other diseases or who cannot obtain certificates from local health authorities because of distance, time, or some other factor may be readmitted by certificate or notice from their physician, or from the physicians serving the schools.
3. Pupils absent from causes other than communicable diseases may be admitted by the principal.

These three provisions will not cover all cases. It is important that some competent authority have the readmitting responsibility. Children should not be permitted to resume their studies and their association with others on merely their own or their parents' wish.

Epidemic Control

Disease becomes epidemic when many more cases appear in a locality than would be considered normal or average for the month or season. It becomes pandemic when it crosses international or continental boundaries. There have been some notable pandemics in the world's

history, and each nation or each community can remember notable epidemics of poliomyelitis, diphtheria, measles, or any of a number of other diseases which are transmissible to man. Such epidemics are always periods of alarm and anxiety. People have been taught to fear disease. They fear its presence and they fear its consequences. It has become a part of our mores to protect children, however possible, against epidemic diseases.

In times of epidemics the school finds itself in a strategic but somewhat confusing position. Unfortunately the public is slow to cast off some old ideas about the nature of epidemics. Many people persist in believing that all diseases are similar, that they are spread in the same manner, and that their causative organisms behave precisely alike. Furthermore, it remains in the minds of many that schools should forthwith be closed during epidemics to prevent the spread of "contagion" and that rooms and buildings should be "fumigated" afterward.

Suggested School Health Policies has this to say on the matter of closing schools during epidemics:

> Contrary to beliefs expressed in popular hysteria, epidemics occurring in communities having well-organized, efficient public health facilities usually can best be controlled if schools remain open but take special precautions for regular daily inspections and continuing observation to detect promptly any students who show signs of illness. The decision regarding the closing of schools when epidemics occur or threaten may be decided locally by answering the following two questions:
>
> 1. Are nurses and medical staffs so adequate and the teaching staff so alert that the inspection, observation, and supervision of students will keep sick students out of school?
> 2. If schools are closed, will students be kept at home and away from other students, so that the closing of schools will not increase opportunities for contact with possible sources of infection?
>
> As a general policy, when question No. 1 can be answered affirmatively, or when question No. 2 is answered negatively, schools should be kept open in the face of an epidemic. This is most often the case in large public schools and in thickly settled communities.
>
> Schools should be closed when question No. 1 is answered negatively or question No. 2 affirmatively. In smaller communities with scattered homes, where chances for personal contact are limited, this is frequently the situation.
>
> In rural communities where pupils are transported in buses and close

contact is unavoidable, it also may be advisable at times to close the schools.[3]

The Twentieth Yearbook indicates much the same when it recommends:

If schools are already in session and an epidemic develops, the decision as to closing the schools should rest largely upon the availability of resources for supervision of school children. Closing the schools leaves the children at loose ends and favors community contacts and dispersion of infection through such channels as theaters, playgrounds, public conveyances, stores, and neighborhood contacts to a greater extent than would be the case if schools were open. On the other hand, keeping the schools open creates a definite hazard unless means are available to administer effectively a policy of close supervision and rigid seclusion within the pupils' own homes as outlined previously.

If the schools are not yet in session and an epidemic begins, as is often the case with infantile paralysis, it may be desirable to postpone the opening of the schools for a few weeks. Postponement is not the same as closing the schools, because if the schools have been open, school contacts have already been made and not as much is gained by closing them. If they have not yet been opened, the schoolroom and schoolground contacts can be avoided by postponing the opening. This procedure is more important for its psychological effect on the public than for its value in controlling disease.

Where school administrators are faced with public opinion based on misinformation which demands the closing of schools, the situation can usually be met most satisfactorily by agreeing to close the schools provided children are rigidly excluded from all public places and are kept on their own home premises. This paralyzing alternative usually convinces parents that a properly supervised school is as safe as any other place during an epidemic, with the possible exception of the home. Unless the home has in it exceptionally wise and firm parents, the school may be the safest place.[4]

The problem of cleaning schoolrooms and disposing of books during or after an epidemic has been described as follows:

The traditional method of disinfection after communicable diseases is fumigation accompanied usually by the liberation of formaldehyde or

[3] *Suggested School Health Policies,* Prepared by the National Committee on School Health Policies of the National Conference for Cooperation in Health Education, Second Printing, June, 1956, p. 24.

[4] *Health in Schools, op. cit.,* p. 335.

sulphur gas into the room or rooms after sealing doors, windows, and crevices. Both methods are expensive, destructive, unpleasant, inconvenient, sometimes dangerous, and, what is most important, always ineffective. The proper use of fumigation is for the destruction of vermin, not the eradication of germs. . . .

In the school room, the principal sources of infection are human beings. The presence of communicable diseases does not involve special methods for insuring cleanliness, nor is the use of chemical disinfectants necessary or even desirable. All that is required is thorough application of the four simple ingredients of complete cleanliness, namely, soap, water, sunshine, and enthusiasm. Thorough cleanliness is the watchword. Little danger attaches to furniture, walls, and desks, and little more to commonly handled objects such as doorknobs, pencils, pens, and books, unless they are handled almost immediately after being freshly contaminated. Nevertheless, children, parents, teachers, and possibly even school administrators may experience a greater sense of security if desks, window sills, and doorknobs are washed after a communicable disease has been discovered. This means, of course, not all the desks in the room but the ones used by the sufferers. . . .

Schoolbooks and public library books are unimportant as far as the transmission of disease is concerned. Unless they are grossly contaminated and passed almost immediately to another user, the danger of infection is slight. In view of the numerous cases of unrecognized disease that exist and the number of such persons through whose hands these books may pass without any precautionary measures becoming possible, it is rather illogical to apply extreme measures to books which are known to have been more or less recently in the hands of persons suffering with communicable diseases. Nevertheless, public opinion changes slowly, and there are demands that something be done.

Books which have been used by patients with minor communicable diseases such as chicken pox, German measles, and mumps, require no special attention unless they have been grossly contaminated,[5] in which case they should be destroyed. Books that have been used by persons with major communicable diseases such as infantile paralysis, smallpox, or diphtheria, should be put out of use for thirty days. . . .

If books have been in the home where major communicable disease exists, it should be assumed that they have been used or handled by the patient and they should be treated accordingly. Pamphlets or leaflets used for accessory reading and of small intrinsic value may be destroyed.[6]

On the other hand, there are competent authorities who recommend

[5] I.e., obviously contaminated with nose and mouth secretions.

[6] *Health in Schools, op. cit.*, p. 340.

that if disinfecting procedures are to be used at all they should vary according to the resistance of the organisms and not to the severity of the disease in the individual attacked. The procedure of disinfecting or disposing of books at all is severely questioned.

In recent years experimentation has been undertaken to determine whether room atmosphere can be purged of disease-producing organisms by the use of vapors or rays. However, independent committees of the American Public Health Association and the National Research Council have reviewed the results of this work and conclude that the general use of ultraviolet irradiation or disinfectant vapors in schools, barracks, and industrial environments is not justified at the present time.

A SCHOOL PROGRAM OF CONTROL

Perhaps the best way to summarize the problem of communicable disease, particularly of diseases of a respiratory type, will be to reproduce an actual program which is in action in a typical public school in a small but enlightened community (Worthington, Ohio. Prepared by the school nurse, Mrs. Lillian Bernhagen, and approved by the Health Council, the Superintendent, and the Board of Education, 1959). Here is a plan, originally conceived by the school-community health council, refined and amplified by the school nurse, approved by the superintendent and board, and now in effective operation. These measures are in accordance with the state and county Health Department regulations.

COMMUNICABLE DISEASE CONTROL PROGRAM

IN

THE WORTHINGTON PUBLIC SCHOOLS

I. PREVENTIVE MEASURES

A. *Employees:*

1. Tuberculosis:
 a. Prior to the notice of their re-employment or the acceptance of their contract, all employees of the Board of Education shall present satisfactory evidence annually of being free from tuberculosis.
 b. Any employee found to have active tuberculosis shall be relieved of his duties forthwith and will be granted a leave of absence with pay until the termination of the current school year. The

employee thereafter will not be re-employed or returned to duty until the disease has been shown to be non-active.

2. Smallpox:
 a. New employees of the Board of Education shall show evidence of a vaccination for smallpox within the preceding five year period.
 b. All employees shall be re-vaccinated every five year period.
3. Diphtheria:
 a. In the event of an epidemic the course of action will be left to the discretion of the Franklin County Board of Health.

B. *Food Handlers:*
 a. In addition to the above (A-1, 2 and 3) all food handlers in the regular lunch service of the schools shall have a Food Handler's Certificate from the Franklin County Board of Health and shall renew it annually by the second week in March.

C. *Students:* In order to comply with the new compulsory immunization law the Worthington Board of Education has adopted the following policy to become effective during the 1959–60 school year.
 1. Students from kindergarten through second grade (less than 8 years of age) must have the following immunizations:
 a. Smallpox—One previous successful vaccination.
 b. Poliomyelitis—Three injections of approved vaccine given in accordance with present recommendations.
 c. Diphtheria, whooping cough, and tetanus—A basic series of three injections to be followed by one booster injection twelve months later.
 2. Students from third through the sixth grades (8 through 12 years of age) must have the following immunizations:
 a. Smallpox—One previous successful vaccination.
 b. Poliomyelitis—Three injections of approved vaccine given in accordance with present recommendations.
 c. Diphtheria and tetanus—A basic series of two injections to be followed by one booster injection twelve months later.
 3. Students from the seventh through the twelfth grades (over 12 years of age) must have the following immunizations:
 a. Smallpox—One previous successful vaccination.
 b. Poliomyelitis—Three injections of approved vaccine given in accordance with current recommendations.
 c. Tetanus—A basic series of two injections to be followed by one booster injection twelve months later.

D. Only pasteurized white milk shall be sold on the school premises.

II. CONTROL MEASURES

A. *Exclusions and Admissions:*

1. When excluding from school for illness or admitting to school following illness, students should be referred to the school nurse if she is in the building. Otherwise, refer them to the principal and notify the nurse on her scheduled visit.
 a. Any undiagnosed illness shall be referred for exclusion or readmission.
 b. Any illness of *three days* or more shall be referred.
 c. Any communicable or nuisance disease shall be referred.

B. *Specific Control Measures:*

Communicable Disease Control Measures

Disease	Incub. Period	Communicable (Exclusion) Period	Contact Exclusion	Symptoms
Chicken Pox	2–3 weeks	*1 week* from appearance of first pox. Dry scabs present do not exclude child.	Not excluded	Skin rash with fever; "crops" of eruptions.
Diphtheria	2–7 days	Till lab. tests are neg. or 14 days from onset.	Family contacts excluded 5 days from last exposure. Re-admit after neg. lab. tests.	Sore throat, croup, hoarseness, fever, and general malaise.
Measles (3-day)	14–21 days	*1 week* from onset	Not excluded	Skin rash, swollen glands at back of neck.
Measles	9–15 days	*1 week* from onset	Not excluded	Fever cough, watery eyes, running nose, rash red spots on cheeks inside mouth.
Mumps	12–26 days	At least *1 week* from onset or *until swelling is gone.*	Not excluded	Fever, painful swelling under jaw or in front of ear.
Poliomyelitis	7–14 days	Until recovery	Family contacts excluded 7 days from last expos. and return with written permit.	Fever, irritability, headache, vomiting, pain or stiffness of neck and extremities, weakness.

Communicable Disease Control Measures (*Continued*)

Disease	Incub. Period	Communicable (Exclusion) Period	Contact Exclusion	Symptoms
Scarlet Fever and Streptococcic Sore Throat	2–5 days	Till complete recovery or at least *1 week* from onset.	Family contacts excluded 5 days from last expos. or if receiving penicillin, erythromycin, or sulfa, 24 hrs. from last expos.	Fever, sore throat, rash, vomiting, nausea.
Whooping Cough	7–21 days	3 *weeks* from onset of cough	Not excluded	Cold, cough, typical whoop begins about 10 to 14 days.

Nuisance Disease Control Measures

Disease	Exclusion Period	Symptoms
Athlete's Foot	Exclusion from shower rooms only	Sogginess between toes, itching, scaling, and blisters. May be raw, cracked, and swollen.
Common Cold	3 days from onset	Dry nose, tingling or burning in nose or throat, sneezing and profuse discharges from the nose, occlusion of one or both nostrils.
Conjunctivitis (pink eye)	Until recovered or return with doctor's written permission.	Redness and swelling of the membranes of one or both eyes with burning or itching, sensitivity to light and a purulent discharge.
Impetigo	Return with doctor's written premission.	Blister-like lesions; later develop into irregular crusted pus-like plaques: Common on face and hands, sometimes on body. Spread by scratching.
Pediculosis (lice)	Until disinfestation is complete—including nits.	Irritation and itching of scalp presence of small light gray insects and/or their eggs ("nits") attached to the hair shaft at nape of neck and about ears.
Ringworm (scalp)	Return to school with doctor's written permission.	Patchy baldness, loss of hair luster, inflammation of infection areas of scalp.

Nuisance Disease Control Measures (*Continued*)

Disease	Exclusion Period	Symptoms
Ringworm (skin)	Return to school with doctor's written permission.	Ring-like lesions on exposed surfaces of body. Edges slightly raised and reddish brown. Lesions gradually enlarge in a circular manner. Itching and burning may be present.
Scabies	Return to school with doctor's written permission.	Severe itching, especially at night. Numbers of small blisters (which may have thin black spots in the center).

III. ADMINISTRATIVE PRACTICES

A. *Teacher's Responsibility:*

1. A daily morning screening program with exclusion of suspicious cases shall be maintained.
2. Any communicable or nuisance disease shall be reported ***immediately*** to the school nurse for follow-up and the date recorded on the pupil's health record.
3. When a child has a communicable disease, check the chart on the preceding page for the exact date the pupil may return to school following his specific disease.
4. *No child shall be readmitted* before the proper period of exclusion has passed.
5. Special screening is done at the end of the incubation period (with school nurse participation when needed) in classes which have communicable disease exclusions. Check with the nurse for help in recognizing specific symptoms.
6. *Illness of three days* shall be investigated by the teacher in the elementary schools (by phone) and the high school by the Attendance Office.

B. *School Nurse's Responsibilities:*

1. She shall advise on exclusions when in the building.
2. She shall be responsible for the immunization program.
3. She shall be responsible for publications and contacts with parents concerning the communicable disease control program.
4. She shall frequently visit the cafeterias and other facilities serving the school.
5. She shall be the liaison between the Worthington School District and the community concerning subjects of health.

6. She shall follow up all cases of communicable disease.

C. *For Tuberculosis:*

1. Mantoux testing program shall be conducted annually in cooperation with the Tuberculosis Society of Columbus and Franklin County.
2. T.B. X-ray program every third year in cooperation with the Tuberculosis Society of Columbus and Franklin County.

SPECIAL PROBLEMS

There are some particular and major problems of disease control which deserve special consideration.

The Common Cold

Until scientists discover more about the etiology, means of transmission, and ways of prevention of the common cold it will remain the most troublesome disease confronting the schools and by far the principal cause of absences. It is troublesome not only because of the discomfort and retardation caused by the cold itself but because in its early stages it is barely distinguishable from the even more serious infectious respiratory diseases. Not one school in a hundred could exclude from school every child presenting symptoms of the common cold, and yet if *some* control is not exercised the so-called "children's diseases" run rampant through school systems. A consensus seems to show the following controls as useful:

1. Parents should be encouraged to keep their children at home when the usual signs and symptoms of a cold are noticed.
2. They likewise should be advised to keep the children with the beginning signs of a cold in bed for the first two or three days as a precautionary measure not only against a "worse" cold but against any more serious disease.
3. Children with beginning and severe colds should be sent home from school with escort.
4. It is not advisable to judge the communicability of a cold by the use of a clinical thermometer in the hands of a nonmedical person. Temperature above 98.6 may or may not be present in the early stages and thus the nonmedical person cannot take an arbitrary standard of, say, one hundred degrees as a point of exclusion.

Tuberculosis

Among communicable diseases causing death among the school-age group tuberculosis is one of the leaders. This disease still, after a half-century of strenuous efforts to control it, develops one hundred thousand new cases per year. It is estimated that four hundred thousand people in the United States have active tuberculosis with nearly a third of these undiscovered and unreported. The disease causes more deaths per year than all the other infectious diseases combined.

Of course, in the instance of tuberculosis many more persons are infected with the live organism than are diagnosed as having an active case of the disease. These persons remain threatened with the disease and thus need to be identified for their own protection and the protection of others. Location and identification of active cases and of the positive reactors (bacillus present) becomes the first step in a control program for schools. How much of this incidence is due to circumstances within the school is not accurately known but assuredly some of it is. In the face of this, all schools can and should institute a full tuberculosis control program. No child should be permitted to contract tuberculosis because of the callous assumption of school authorities that tuberculosis is a problem for the home and for public health workers. Children and teachers bring tuberculosis to school with them; the school thus becomes a medium for its transmission to others. A control program is the only answer to date; the following are the essential steps in such a program:

1. Tuberculosis case-finding is the important primary step in school and college health programs. There are two principal ways of finding cases: by the tuberculin test or by X-ray screening. The choice between the two, for mass case-finding programs, is a matter for local medical authorities to decide. In low-prevalence populations, tuberculin skin testing is likely to be the choice. If adequate safeguards are present, there is no present danger in using the X-ray (radiography) test. The amount of radiation to which the person is exposed under competent administration of the X-ray is negligible.[7]

2. If tuberculin testing is used, the decision between the use of the

[7] LeRoy S. Burney, Surgeon General of the United States, "X-Ray Case Finding Programs in Tuberculosis Control," *Public Health Reports*, LXXIII, No. 1 (January, 1958), p. 83.

Vollmer Patch Test and the Mantoux intradermal test also will belong to the local medical authorities. In any event, consensus seems to be that the test should be administered to all elementary school children at entrance and as often thereafter during their school years as the circumstances in their community warrant it. In high-prevalence areas, tuberculin testing will be more frequent than in other areas. If a school employee in contact with children has active tuberculosis, tuberculin testing will become more frequent for a time. These are matters for medical decision and educational cooperation.

The tuberculin test tells who harbors the tubercle bacilli, and hence who needs observation and treatment. It is highly useful in giving the lead to finding the active case of the disease.

3. All positive reactors should have an X-ray examination of the chest for further determination; if the disease, in either its primary or its reinfection form, is found, the child should be placed immediately under competent medical care.

4. The information on each child should be as complete and accurate as possible in regard to the disease history of close relatives.

5. Teachers in elementary schools should sharpen their continuous observations on the health of their pupils in order to be on the alert for any unusual behavior or complaint upon the part of students; when such deviations from the normal are observed they should be promptly reported to parents and to school medical authorities.

6. Secondary school students (particularly upon reaching adolescence) should receive the same tests and observations. However, because of the higher rate of tuberculosis and the greater effectiveness of the X-ray in this age group, many schools are finding it profitable to dispense with tuberculin testing and go directly to the X-rays, using portable machines and miniature films for the first screening. Children who are known to be in contact with tuberculous persons should be examined frequently.

7. Every school employee should be required by the board of education (a) to submit, before employment, evidence of freedom from tuberculosis, and (b) to submit the same evidence every two years thereafter. This required measure will stand up in the courts against those who view any such precautionary measures as an infringement of their personal rights. Courts have sustained boards of education who have required teachers and others to be X-rayed as a protection for children.

8. There should be a complete program of education about the disease which brings to the student population, to teachers, and to parents

in the home the full and accurate story of tuberculosis prevention, detection, and care. Only through education and scientific medical care can the disease be brought fully under control. People must know about the disease and act in accordance with what they know. Such a program must be geared completely with the efforts of local health authorities and must be aimed at ever more efficient case-finding programs.

9. The school program should be supplemented wherever possible by a complete community program of control aimed at a universal application of the chest X-ray to find every adult case and to remove him from public contact.

10. All personnel found to have tuberculosis should be removed from contact with others until, in the judgment of medical authorities, it is safe to allow them to return. The removal from duty of employees may work a hardship. In that event the board of education could well consider plans for extended sick leave with financial benefits to protect the employee against destitution.[8]

Cancer

Cancer is not generally thought of as a disease of the school years. And yet it causes many deaths among young people. Until such time as research workers in cancer can reveal the mystery of cause and develop preventive and curative measures, control will be centered principally in early recognition and treatment. Some teachers are under the impression that cancer is principally a disease of middle life or old age and thus would be of little interest to school children. The facts contradict this view and indicate clearly that education about the disease should commence early and continue through until the entire story is familiar to the school population.

[8] For an amplified description of modern and recommended control techniques the reader is referred to: Robert B. Kerr, M.D., "The Tuberculin Test," *Journal of School Health*, XXVI, No. 10 (December), 1956, p. 307; Floyd M. Feldmann, M.D., "The Tuberculin Test," *Bulletin of the National Tuberculosis Association*, October, 1955, 135; R. J. Anderson, M.D., P. E. Enterline, F. J. Hill, M.D., Jean Roberts, *An Evaluation of Tuberculosis Detection by Chest X-Ray Services*, Public Health Reports, LXIX, No. 11 (November), 1954, 1053; "X-Ray Case Finding Program in Tuberculosis Control," A Public Health Service Statement from *Public Health Reports*, United States Public Health Service, LXXIII, No. 1 (January, 1958), 83; A. A. Pleyte, M.D. and E. Donald Brown, "The Value of Tuberculin Testing in Younger Age Groups as a Clue in Case Finding," *Journal of School Health*, XXVIII, No. 4 (April, 1958), 127; S. S. Lifson, Charlotte V. Leach and Edward Sierks, "Controlling Tuberculosis in the High School," *Journal of Health, Physical Education and Recreation*, XXVI (February, 1955), 14.

The American Cancer Society recommends the development of the following concepts in this educational program:

1. Cancer is curable when detected early and treated promptly and adequately.
2. The danger signals are the keys to early detection.
3. Reliance is placed on three methods of treatment from competent sources: X-ray, radium, surgery.
4. Periodic physical examinations are essential.
5. Cancer is an uncontrolled growth of cells.
6. Cancer may occur at any age. It is particularly prevalent in older age groups.
7. Research and cancer control programs of public and private agencies have improved the situation; more such effort is needed.[9]

Skin Diseases

Schools are frequently, some constantly, beset with epidemics of skin diseases. Ringworm, impetigo, pediculosis, itch, and head lice or body lice are the most common communicable ones. Eczema, acne, and hives are common among the noncommunicable skin diseases. All of these require school controls, not because of their mortality but because their occurrence usually leads to retardation, absenteeism, embarrassment, social prejudice and ostracism, personal feelings of inadequacy, and, in more than a few instances, secondary infections of a serious sort. Controls for skin diseases may be school sponsored precisely as for tuberculosis:

1. There should be continuous observation of the skin of the hands, face, neck, and scalp of all pupils and, wherever possible, observation of feet to locate deviations. This is as important in the secondary school as it is in the elementary.

2. Children with communicable skin diseases should be excluded from all contact with other children; they should not use towels, shower rooms, swimming pools, mats, utensils, or books used by other children; they should be excluded from school completely unless they are dressed to prevent the spread of the disease.

3. Children excluded entirely should remain at home until they are medically approved to return. Such exclusions should be reported to public health authorities.

[9] American Cancer Society, "Cancer Education in the Schools," *Health, Physical Education, and Recreation,* September, 1949, pp. 442 ff.

4. Floors of gymnasiums, shower rooms, locker rooms, pool decks, training quarters, and all other floor areas likely to be moist and to come in contact with the skin should be cleaned and scrubbed thoroughly every day and should be aired or ventilated so as to be kept as dry as possible.

5. Whenever gymnasium, swimming, home economics, band, or other clothing is rented it should be pasteurized (not boiled) before being passed on to the next person. If gymnasium clothing (even socks and supporters) can be brought to the temperature of 180°F. three times in the washing, it will test out free of the communicable organisms of skin diseases.

6. All students should shower thoroughly before using pools and after physical education periods.

7. Students should be taught to dry off completely, hair and feet particularly, after using showers and pools.

8. Foot baths with disinfecting solutions are of less consequence in the control of ringworm of the feet than the controls just mentioned.

Venereal Disease

Figures or estimates on the amount of venereal disease among the school population are less reliable, perhaps, than for other diseases. They indicate, nevertheless, that there is venereal disease among the school population. Syphilis is not uncommon among the high-school population, nor is, of course, gonorrhea. Roughly 12 percent of venereal cases are among people fifteen to twenty years old. Nonsexual gonorrheal vaginitis has been found among elementary-school children. The venereal disease problem exists. It cannot be brushed aside as something not at all pertinent to school health education. Its peculiar place in the public mind, related as it is to morals and taboos, seems to make venereal diseases a special problem. Actually, they are merely infectious diseases and should be considered as such without fear, self-consciousness, or community opposition to the effort, Each of the principal venereal diseases is far too serious, too deadly, to permit a prudish nineteenth-century attitude to keep adequate controls of these diseases off the agenda of a modern program of school health education. Such controls would include the following:

1. A full program of instruction about the venereal diseases should be given concerning their nature, means of communication, prevention, the problem of case finding, quackery, treatment, relation to heredity

and to congenital factors, and all other information required to produce an informed and enlightened school population.

2. A program of parental orientation with the problem of venereal disease is necessary in which not only the school program can be explained but also the information possessed by parents can be brought up to date.

3. A program of case finding, using the physical examination, personal counseling, blood serology tests, and any other technique available, is essential. When cases are found they should be excluded from school activities until medically permitted to return. Such cases as found in school should be reported to public health authorities.

4. If the school can obtain the cooperation of private physicians and of public health officials in reporting student cases to school authorities, the school not only can protect its other students by that knowledge but also can assist the physicians in the educational program to which each case is usually submitted. In the instance of the venereal diseases, as in tuberculosis, a strong control program involving medicine, public health, and education offers an effective attack upon disease.

Heart Disease

There are varieties of heart disease, all of which have some bearing upon school health education. Hearts may be structurally or functionally damaged, may be rheumatic, or may be congenitally malformed. Variations in heart function may be psychologically engendered. There are wide variations within these groups and it is safe for school people to assume that each child with a heart disability is different from the next. The differences will appear not only in the nature of the disability but in the interpretation and recommendation made by the physician concerning it. Not all children with heart variations are "heart cases" and to be treated as invalids. Not all, by any means, will respond to purely medical treatment. Many need analyses of their social, psychological, and personal states to determine possible causes of the cardiac irregularities. Each case must be dealt with medically and educationally as different from all others, and programs of study, physical education, and extracurricular activities must be discussed and arranged to suit the student at hand.

As Dr. Carl J. Marienfeld says:

Heart disease in children falls into three general categories. First there

is the infectious group, of which rheumatic fever is the largest and most important. Secondly, there are the children with congenital heart disease—a much smaller number, but of increasing importance in recent years, since a large number are now curable by surgery. Finally, there is a still unfortunately large group of so-called "potential" or "possible" cases, who actually have no heart disease but whose diagnosis is based upon either a vague history resembling rheumatic fever or upon the incidental presence of an innocuous or meaningless murmur.[10]

In order to differentiate between the nonpathological type and the more serious types a complete study of the heart must be made and usually by an experienced cardiologist.

Apparently there is no such thing as "athlete's heart" in the sense of a heart damaged by athletics. Evidence, conflicting and unrelated though some of it may be, indicates that a previously undamaged heart will not be damaged by strenuous sport per se. The heart can be damaged, but only by disease, exposure, malnutrition, tobacco and so on, not by work as represented by schoolboy athletics. Athletes do die from heart disease the same as other people but it was another factor, not the athletics, which caused the inferiority in the heart.

The flood of recent information relative to heart disease has made most individuals aware of the vulnerability of the male in disturbances of the heart and circulatory system. Among white males in this country, the death rate from heart disease rose from 203 per 100,000 in 1931–35 to 226 per 100,000 in 1951–54. During the same 20 years, the death rate from the same heart diseases among white females dropped from 140 to 105 per 100,000. For all ages combined, mortality from heart disease among males about double that among females, but, at the age range 35–54 years, the death rate among males is about three times that among females.[11]

So some attack upon the problem can very reasonably be made in the school program. Such a program would include a thorough development of instruction in the health courses as well as correlated material where useful. It would involve a program of case finding of the cardiac involved child with appropriate modifications of the school day wherever indicated. Restrictions on stair climbing, physical education, consecutive study hours can be worked out to fit the problem presented.

[10] Carl J. Marienfeld, "The Cardiologist Looks at the School Child," *Journal of School Health*, XXVIII, No. 2 (February, 1958), p. 3.

[11] Marjorie U. Wilson, "Biological Changes in American Women in the Last Fifty Years," *Research Quarterly*, XXVIII, No. 4 (December, 1957), p. 413.

Cots can be set up for children in need of rest. Home tutors should be provided for children with heart disabilities so severe as to keep them from attending school. In the school's programs of continuous observation, teachers should be alert to signs of loss of weight, rapid pulse, fatigue, nosebleeds, chest and abdominal pains as possible tip-offs of a cardiac condition. Where such occur the machinery for parent notification and medical supervision should be set in motion.

The child with heart disability should be assisted to lead as nearly normal a life as possible, with emphasis on his abilities and potentialities rather than his limitations, with help given him at every turn to make appropriate compensations, and with every opportunity to gain those values from school activities, physical education, shop, and other sometimes barred activities as will be compatible with his condition. Great disservice is frequently done such children by excusing them forthwith from physical education. A physical education program should be constructed *for them* from which the satisfactions of success, of skill, and of sociability will come as surely as to the "normal" child.

Perhaps as important as any phase of the school program for children with heart disease is the involvement of the teacher. In order to aid these children fully the teacher needs accurate, full, up-to-date information including specific and realistic recommendations for the child's program. For example:

During the school health appraisal, a fifth grade boy is found to have a 'heart murmur!' This finding is reported to the boy's parents with the recommendation that he be seen by his family physician for further diagnosis. Several weeks go by. The school hears nothing more. Finally, the school nurse calls the mother, who gives her permission for contacting the family physician directly. A telephone call to the doctor gives her the information that the boy does have a 'heart murmur' (whatever that may mean) and that the boy should not participate in sports that are "too competitive." This is all the information she is able to get and she passes it on to the classroom teacher. It is now up to the teacher to exercise discretion as to what activities are not considered 'too competitive.' This is not an unusual situation and it leaves the school with questions: should the boy be classified as a "cardiac"? May he play baseball, basketball, touch football, volleyball, run relays? Should he be excluded from gym entirely?[12]

[12] Morris Hamburg, "The Educator's View of the Cardiac Child," *Journal of School Health,* XXVIII, No. 2 (February, 1958), p. 44.

School personnel should, in all instances, be given a practical and guiding understanding of the child's medical condition.

How is the cardiac child located? It is not always possible to locate these children as promptly as would be good for them. To establish as good case finding program as possible would involve explicit medical reports on children entering the school for the first time; referral by teachers of children presenting symptoms; analysis of requests for exclusion from physical education and similar activities; analysis of causes of prolonged absenteeism; and careful attention to special reports from physicians and clinics. The teacher or nurse becomes an important cog in this program.

Rheumatic Fever

Rheumatic fever has been called the major medical problem of the school age child.

Rheumatic fever is a disease in which inflammation of many tissues of the body occurs simultaneously, and the symptoms are due to the localization of this inflammation: in the joints to cause rheumatism; in the skin giving rise to an intermittent rash; in the subcutaneous tissue causing nodules under the skin; in the brain causing chorea or St. Vitus dance; and in the heart, leading to swelling and inefficiency of the heart muscles and inflammation and poor closure of the heart valves. This occurs during the acute attack during which the child is usually obviously ill and also usually has fever. Unfortunately, however, occasionally these symptoms are very mild and may be missed unless the heart is examined very carefully.[13]

It is caused by a streptococcus bacterium which produces a sore throat preceding the rheumatic fever attack and which is controllable by the administration of antibiotics.

. . . In the usual mild case and with adequate treatment, complete disappearance of the inflammation occurs during the bed rest and treatment period. This child may never give evidence of heart disease and should return to normal activities after a reasonable period of convalescence. If valve damage has been slight though permanent, this child also may return to normal activities except for the elimination of certain competitive sports. If damage is severe and the heart does not improve after the attack, or repeated attacks occur, then the question of special school for handicapped

[13] Carl J. Marienfeld, "The Cardiologist Looks at the School Child," *Journal of School Health*, XXVIII, No. 2 (February, 1958).

children arises, but these cases are now fortunately becoming much less frequent.[14]

A school program to aid in its control would duplicate in essential respects the programs previously described for heart disease and tuberculosis. The cooperation of teachers in recognizing early symptoms is important. Teachers and parents alike should be sensitive to the appearance of these signs and conditions which may be preliminary to rheumatic heart disease: failure to gain weight, pallor, poor appetite, fatigue, frequent colds and sore throats, scarlet fever, unexplained nosebleeds or fever, pains in arms, legs, or joints, unusual restlessness, history of rheumatic fever, and a decreasing accomplishment in a child who has usually done well.

Children showing such signs should immediately be referred to parents and a physician for an examination. A program of education can be worked out intelligently only if parents, physician, and school personnel work together on the problem of the individual child.

Care of the post-rheumatic child is of importance. He must have a keen appreciation of his own capacities and be able to conserve his energy while the damaged heart muscle is repairing. Supervision of his physical activities is essential and school personnel must have specific and helpful recommendations from the medical group.

Muscular Dystrophy

This is a chronic, noncontagious, progressive disease characterized by weakness and wasting of the voluntary muscles. Its cause remains unknown to date. Fatalities associated with the disease are due to other causes attendant upon the inability to use one's own muscles. Some 200,000 persons, including children have this disease and because early symptoms of muscular weakness, falling, difficulty in stair climbing, and contractures may appear in childhood the school is interested.

The principal feature of the school program is one of case finding.

Cerebral Palsy

There are a number of disabilities grouped as cerebral palsy. They have resulted from damage to the brain before, during, or after birth. and early referral for medical care. So far little effective therapy has been developed.

[14] *Ibid.*, p. 5.

The principal effect is loss or impairment of control of the voluntary muscles and there is considerable variation in the severity or extent of the loss. Although the principal impairment is one to motion there can also be interference with vision, hearing, speech, intellectual capacity and sensory perception.

It is estimated that nearly a million persons in the United States have cerebral palsy of whom about one-third are school age children. About 10,000 palsied babies are born each year.

Because the cases are normally already known before school age, the school program need not emphasize case finding at all. The principal need, if the child is able to attend school, is emotional and psychological. The child needs psychological counseling and guidance. He needs affection and opportunities for recognition, achievement, independence and with satisfying social relationships. A sense of personal worth becomes exceedingly important. Effort to provide these may be stimulated by health education personnel in schools.

Food Handlers

Although food handlers present no unique problems as contrasted to other employees, it is important each person be certified or free from any communicable disease, notably tuberculosis and typhoid fever. Ordinarily city and state health departments have strict regulations concerning food handlers but it is important that school health education administration cooperate fully in the enforcement of these. The Joint Committee on Health Problems in Education has the following to say regarding food handlers:

> The nature of food-borne infection and poisoning requires daily attention to the health of workers. Workers should be trained to recognize danger signals in themselves and to take responsibility for protecting others. Some one person, however, should have authority within the school, or school system, to excuse from service any food handler who is a menace to the health of others. Provision should be made for substitute food service workers, and sick leave for the full-time food handler.
>
> Pre-employment and periodic medical examinations are desirable as preventive health measures for food handlers as for all school personnel. From the point of view of food handling, however, these measures are secondary in importance to daily supervision and in themselves may give a false sense of security.
>
> Clean personal habits are required for both hygienic and aesthetic

reasons. Clean uniforms, hairnets, and trimmed nails are indicative of attention to careful grooming. Fingers should be kept from the hair, face and out of the mouth.[15]

THE CHILD'S RETURN TO SCHOOL

Special problems may be presented by children and youth returning to school after prolonged or serious illness. These problems may be either psychological or physical or both. Teachers must remember that disease or accident do not affect a child in fragments but involve the total being—the total personality. The child may require specific rest periods, restriction of physical education activity, in some cases special classes or special gear in regular classes. But, equally important the teacher must appreciate the fact, as Dr. Hamburg suggests:

> . . . that secondary handicaps which may emanate from a feeling of rejection can prove to be more harmful and crippling than the factor of the physical disability itself. Where teachers have an insight into such problems they can be of enormous help to both the child and his parents. To the child she can extend a feeling of her acceptance of him on the same basis as other children. She can guide him toward self-understanding. She can work toward allaying any anxieties he may have developed, and can help him avoid developing compensatory characteristics that may create problems for himself and others.[16]

As early as possible it is desirable to reestablish a normal and acceptable relationship between the child who has been ill and his classmates.

SELECTED READINGS

In addition to the articles footnoted in this chapter, all of which are valuable contributions to the literature of school controls for disease, the following are basic:

American Public Health Association, *The Control of Communicable Diseases,* seventh edition, New York, 1950.

[15] The Joint Committee on Health Problems in Education, *Healthful School Living,* Washington, D.C., and Chicago, National Education Association and American Medical Association, 1957, pp. 122–123.

[16] Hamburg, *op. cit.*, p. 5.

American Public Health Association, "Suggested Standards for Health Services in Secondary Schools," *American Journal of Public Health Yearbook, 1951–52,* May, 1952, p. 39.

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *School Health Services,* Washington, D.C., 1953.

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *Healthful School Living,* Washington, D.C., 1957.

"Tuberculosis Case Finding Among School Children, College Youth, and Employed Personnel in Schools and Colleges," *The Journal of School Health,* U.S. Department of Health, Education, and Welfare, October, 1958, p. 268.

— 12 —

The Mental Health Program

It is a singular mistake to believe that school health is concerned only with the *physical* aspects of child health. To be sure most people, as yet, think of health mainly in physical terms. Aims for *physical* well-being or *physical* fitness are still more clearly understandable by the general and some of the professional public, even though concise and discrete definitions of any such physical attributes are impossible to produce. The holistic nature of man makes it impossible to fragmentize him, to be concerned with *physical* health to the exclusion of all else. The educator who is sophisticated in matters pertaining to the nature of the child to be educated knows that *mental* health and *physical* health are merely two gross aspects of the same thing, and that there can be no dealing with one without the other. The proven interrelationship of vital functions and their harboring organs, the relation of heart to fears, of heart to digestion, of digestion to happiness, of fatigue to success—these and all the others cause the modern educator to look carefully at the human being he is attempting to educate.

One of the strange omissions in twentieth-century educational thought has been the idea that an understanding of the nature of the learner is basic to teaching. The veterinarian knows more about sheep than many teachers do about children. This fact particularly points out the folly of one of the proposals for educational reform put forth by some "scholars" who suggest teachers be prepared in four years of subject matter with a fifth year to be added for a few courses in "methods." Nowhere do the proposals suggest a study of the nature of the student.

It is because man is so ignorant of man that many ills and difficulties exist to the extent they do today. And in no facet of man's life is this more true than in the area of mental health.

Definitions

Mental health programs are concerned with the psychological aspects of the individual including his emotional reactions, intellectual activities, character, compulsions and drives, and personality traits. By studying mental health we come to know man's psychological needs and how to meet them. Admittedly it is an undeveloped field of inquiry, for the reason that the scientist has only comparatively recently turned his attention to mental phenomena. He is only now learning that there may be entities of mental disease subject to a differential diagnosis and differential treatment. Many of his hypotheses concerning insanity are being revised. The nature of psychoses, psychoneuroses, psychophysiologic disorders are being understood better each year. The influences of childhood, of school life, of youth are coming into focus, and the constantly expanding literature of the field is increasingly helpful to teachers.

The American Psychiatric Association has classified mental diseases into four convenient categories which are helpful to the health educator in establishing clues as to preventive measures. These are:

1. The mental deficiencies—incomplete or arrested mental development, genetic, congenital, and hereditary in origin.
2. The neuroses—arrested development affecting only a portion of the personality, including the exhaustion and anxiety states, psychasthenias or fears, obsessions and compulsions, and the hysterias.
3. The epilepsies.
4. The psychoses—involvements of whole personalities; serious impairments of the ability to feel, perceive, remember, and think, including the hallucinations, delusions, and abnormal emotional and motor reactions. The psychoses are divided for convenience only into organic and functional in their origin, and the latter are believed to be caused by hereditary, constitutional, or environmental factors.

This classification, tentative though it may be, gives the health educator the hope that through his efforts an adolescent can be guided

through school or college without appearing as a statistic in the mental disease column. Or an intelligent discussion of marriage and its "give and take" might prevent the exhaustion neurosis which frequently follows quarrels in the home.

The Extent of the Problem

In considering the problem, we should not think of mental illness as one broad, all-inclusive term involving merely one form of aberration or disorder. The mentally ill present many different forms, types, and descriptions of illness and the missed opportunities for developing the fullest in psychological capacity is even higher. The problem is not merely one of preventing illness—it is even more challenging when viewed as one involving the cultivation of psychological strengths, of the development of power, of control, and of liberation of the mind from all the fettering impediments of a worrisome life so as to allow for full expression of an intellect and personality in constructive channels. It is as important to prevent a "nervous breakdown" as it is to prevent tuberculosis. It is also as important to cultivate peace of mind as it is to develop well-nourished and strong tissue in the muscles. It is the familiar story of prevention *and* development. In this area of health one deals with the life of the mind, the emotions, the personality, the causes and influences of behavior, the inner resources of an individual which in all likelihood determine whether he makes the adjustment to a highly complicated society or whether he fails to do so and goes under.

Many fail to make the adjustment. Many slip away either temporarily or permanently from whatever is considered the "normal." Pasamanick and others estimate that

> . . . approximately 10 per cent of a noninstitutional urban population are at one moment in time mentally ill. There is approximately 12 times as much psychoneurosis as psychosis while psychophysiologic autonomic and visceral disorders are two-thirds as common as the neuroses. Male psychoses appear to be twice as frequent as those in women, but, because of the small numbers involved probably is not statistically significant. On the other hand, females have more psychoneuroses and psychophysiologic autonomic and visceral disorders.
>
> Psychoses rise precipitously with increasing age. With no cases under 15, only 0.4 per thousand in the age group 15 to 34, increasing 14-fold in

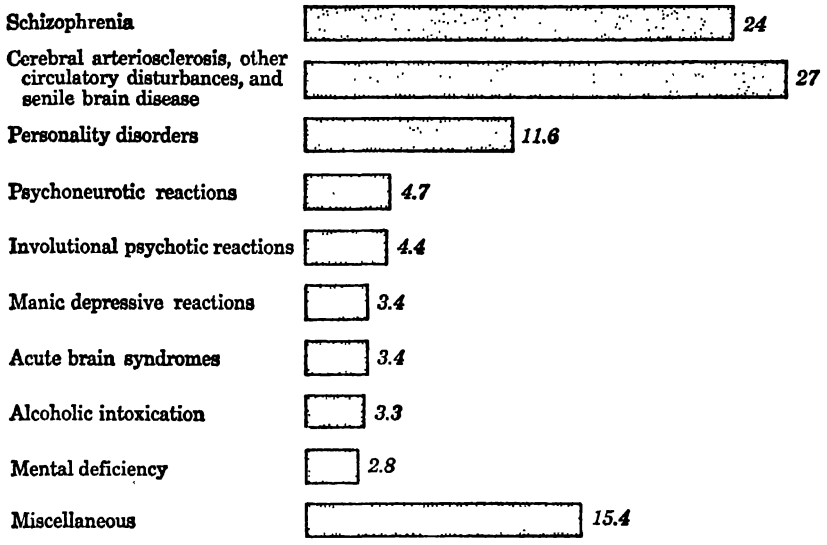


FIGURE 5. Percentage of First Admissions to Public Mental Hospitals by Cause—1953.

the group 35 to 64, which in turn is multiplied by five in the group 65 and over.[1]

Each year some 250,000 people enter hospitals for mental patients and another 100,000 are readmitted. These are persons sufficiently ill to be recognized and cared for. But there are some 7 to 10 million others who are unhappy neurotics presenting a serious burden to themselves and to society. Overall, there must be close to 16 million persons suffering some form of mental illness.

Narcotic addicts	50,000
Problem drinkers	3,800,000
Chronic alcoholics	950,000
Crimes committed annually	1,750,000
Suicides annually	17,000

[1] Benjamin Pasamanick, Dean W. Roberts, Paul V. Lemkau, and Dean E. Kruger, "A Survey of Mental Disease in an Urban Population," *American Journal of Public Health*, XLVII, No. 8 (August, 1957), pp. 925–927.

Divorces annually	1 in 4
Juvenile court cases	265,000
School children needing love	10%
Mentally retarded	4,800,000
People treated annually in mental hospitals	2,500,000

THE SCHOOL'S RELATION TO MENTAL HEALTH

The school is unavoidably in the middle of all this. It can neither evade nor disavow its responsibility. Children who come at 6 and leave 12 or fewer years later have been affected psychologically by school life. One could not spend 5 hours a day, 5 days a week, 30 weeks a year for 12 years living in a group, meeting the pressures, reacting to the successes and the failures, without being profoundly affected by life within a school. The intriguing question is: Is the effect of that life good, or bad? Does education contribute to or detract from one's ability to get along in life psychologically? Is the school intimately or remotely concerned with those million children who, before they die, will have been in hospitals for the insane?

The fact of the matter is that much of the mental ill health of the population has its origin in the years of school age and is unquestionably affected one way or another by the experiences in school—not one experience, perhaps, but the cumulative affect of a series of experiences in home, school, and community which may have built up a frustration or fostered an immaturity which later breaks out in the overt behavior of the mentally ill. Or, conversely, the school may provide the experiences which make for the stability, maturity, and balance of the adequately developing personality.

The school, like the community of which it is a part, needs to give thought to developing action in three principal areas where work will be helpful: (1) the development of a program for the treatment of those already maladjusted or ill, (2) a program of guidance or counseling services to help children meet their daily problems, and (3) the development of instructional materials in this area precisely as they have been developed in the other more familiar aspects of health education.

Objectives of the School Program

In developing appropriate objectives for this phase of a school health education program, one should realize the basic truth that when a child

reacts to school he reacts to *all* of school and *all* of him reacts. It is not merely that his vision is affected by badly lighted classrooms. His vision may also be affected by teachers who do not shine. No phase of school life may escape analysis when it is agreed to examine the school for the purpose of determining its relationship to mental health. Such aspects of school life as rigidity of emphasis upon factual data, failure to recognize existing emotional problems, misunderstandings between teacher and parent, teacher selection, type and quality of the physical education program and its relation to feelings of success and failure, peer rivalries, prejudice, and many other problems would be examined.[2]

From such preliminary analyses objectives begin to shape up. They might be expressed rather simply as an aim to understand "the basic personality needs of each child according to his sex and his emotional developmental level with a view of helping him meet these needs, and at the same time . . . helping him to conform to the world as it is."[3]

Or, objectives may be merely descriptive of the program; Dr. Dana Farnsworth of Harvard says: "Mental health in the schools should be thought of in terms of the central purpose for which schools exist, that is, to enable pupils to make optimum use of the qualities, actual and potential, they possess. Accordingly, mental health is a matter of morale, of honesty, of concern with prejudice, discrimination, cheating, fanaticism, hatred, and how teachers and pupils think of one another. . . . Training in feeling is fully as essential for the truly educated person as training of the intellect."[4]

Still another perhaps more formal description which can be used for the aim of the program comes from the Kansas study. "It implies the development and maintenance of health attitudes in individuals so that they are capable of adapting to and withstanding the ordinary vicissitudes of life; of utilizing their energies constructively; and of achieving a harmonious compromise between personal needs and the

[2] See A. A. Hellams, M.D., "A Program for Promoting Mental Health in the Oklahoma Schools," *Public Health Reports,* LXIX, No. 11 (November, 1954), 1074–1078; and Don Wille, with the LaCrosse Chapter of the Wisconsin Association for Mental Health, "Some Ideas for a Proposed Program in Mental Health," January, 1956.

[3] Geraldine Rickard, "Mental Health in the Classroom: The Total Child Comes to Life," *Report of the Joint Committee on Health Problems in Education of the National Education Association and American Medical Association,* January, 1958.

[4] "Mental Health Is Called Keystone of Education," *Public Health Reports,* LXX, No. 2 (February, 1955).

realities of the environment. In this way the promotion of emotional maturity would improve adaptation in interpersonal relations, in group relations, and possibly also in international relations."[5]

Preparation for School

The task of the school in contributing to such adjustment as described above would naturally be facilitated if children could be prepared at home for the school experience. Principally the school should not be a combination of correctional institution and labor camp. "Going to school" need not be depicted in song, story, and cartoon as the end of the happy carefree days of childhood or of summer vacation. Teachers are generally not the stern-faced ogres of days gone by. The attitudes which children bring to school frequently determine the quality of their adjustment to school and to the life for which school prepares.

Parents who can give their children a good start emotionally and physiologically, who can prepare them for being away from home, provide a preschool range of experience and some participation in the sharing discipline needed for group life, who can teach him to follow rules and agreements, will give the child an advantage in coping with the demands of the school day.

A Psychologically "Healthy" Environment

The emotional health of pupils is affected by every aspect of their school system, including the general philosophy of the school, preparation of the curriculums, selection and appointments of teachers, and procedures related to supervision, discipline, promotion, and grade placement. A child-centered curriculum in which the native interests and needs of learners are guiding factors in determining content is more likely to be productive of well-adjusted children than one in which the content is determined by "college boards," state scholarship contests, or other extraneous standards. A school in which the students feel at home, as if they were a part of it rather than merely forced to attend classes in the building, one in which there is mutual respect and a friendly attitude between staff and students, has this healthy atmosphere. The system of discipline, of rules and regulations

[5] "Promotion of Mental Health in the Primary and Secondary Schools: An Evaluation of Four Projects," formulated by the Committee on Preventive Psychiatry of the Group for the Advancement of Psychiatry, *Report No. 18*, January, 1951, p. 1.

governing student conduct, must be eminently fair and intelligent and its formation participated in by students, if possible.

When the school does not qualify as the butt of the old jokes about how happy students are when the building burns or teacher is ill or vacation is at hand, then it is well on the way toward being a fine influence on the lives of its boys and girls.

THE ACKNOWLEDGMENT OF VARIATIONS

Modern schools are moving more and more toward the acknowledgment of and programming for individual variations among students. Children will vary widely in mental ability and in behavior. Some will progress rapidly and some slowly, some will show evidence of scholastic brilliance, and others will be quite ordinary in their intellectual accomplishments. Some will show their emotional disturbance by an allergic skin reaction whereas others will lose their appetite because they do not like their teacher or because they feel they cannot meet the demands of the assignment. Some will fidget and some will persecute, some will refuse to talk and others will want to leave school—all because of some inability, some frustration involved *in the school situation.*

The alert teacher not only will recognize these variations and be sophisticated about their origin but will also be interested in a discovery program of screening which will help him locate disturbed children and cope with them better.

Although many of these psychic or emotional states are originally developed in childhood (thus making mental health programs in elementary schools particularly important), nevertheless, there are many problems of the adolescent which need careful attention. The adolescent manifestation of his emotional needs and conflicts in alcoholism, hot rods, thievery, narcotics, and sex explorations are merely violent modes of expression or attempts at solution of conflict.

Furthermore,

> . . . in the emotional behavior of adolescents, the so-called "level of aspiration" is of particular significance. The adolescent aspires for many things that, for the moment at least, he cannot reach. When he strives to reach objectives beyond his mental or physical abilities, or beyond his financial means, he is likely to experience emotional reactions. It is often necessary for the school to assist the adolescent in adjusting his levels of aspiration to his potentialities.

For example, all children cannot possibly achieve grades of "A" under conventional methods of grading. Attractive rewards for those who cannot excel scholastically must be provided, so that the average or below-average child is not thrown into direct competition with children who are much more brilliant. Rewards in both extracurricular and curricular activities must be within the reach of every student. Each child's scholastic success must be appraised in terms of his progress in relation to his ability, rather than in relation to the attainments of more gifted children.[6]

It should be clear that all children are busily but perhaps unconsciously engaged in developing a "self-image." They begin to develop feelings of self-esteem, of status, of "who they are" in relation to their fellows. This image of themselves takes shape from every influence which bears upon them from both within and outside their own being. Physical appearance is important. ". . . any child who is extremely fat, thin, short, weak, strong, ugly, or who, by reason of physical deformity, is different from his fellows, must solve problems of adjustment growing out of these deviations in addition to those he would face were he average in these respects. He may develop into either a weaker or a stronger individual as a result."[7]

The problem seems to be to understand the adolescent as he develops and to meet the basic challenges resulting from physiological development and social pressures: (1) the need for emancipation from adult authority, (2) the sex drive, and (3) aggressive drives to achieve and dominate. Problems thus grow from many origins—from changes in physical growth, from relationships with his fellows and his peers, from disturbed parent relationships, and from the necessity of adjusting to school.

These challenges emphasize the need for dealing with children and with adolescents *as individuals* in an effort to help them solve their problems, grow in stability, and attain optimum adjustment to their complex world.

WELL-ADJUSTED TEACHERS

Because so much of a program of mental health depends upon the attitudes and activities of teachers, it is important to do everything

[6] Henry P. Smith, *Psychology in Teaching*, Englewood Cliffs, N.J., Prentice-Hall, 1954, p. 65.

[7] Smith, *op. cit.*, p. 25.

possible to secure their emotional stability. The teacher is in a position, through the sheer presence and influence of her personality, to affect the development of a variety of emotional and intellectual responses on the part of her pupils. W. V. Snyder in a series of three articles has presented an important summary of investigations on mental health in schools.[8] He says that teachers with the best mental health themselves had the more stable pupils. Baxter has "shown marked evidence that the behavior of the teacher has an effect on the pupil's sense of security, freedom from tension, courtesy, resourcefulness, and seeking of social recognition." Furthermore, a teacher relatively free from problems of her own can be more alert to problems of others and can devote more time to creating the classroom atmosphere in which children can develop socially and creatively.

The teacher whose economic life is secure, who likes her job, who is organically well, who participates with satisfaction in the social and recreative life of the community is a better teacher because of these satisfactions. A teacher who is able to handle criticism and gossip and not be depressed by it, who faces the onset of sedentary life with resources able to meet it, and whose own emotional sex life is in order is a far better teacher because of these attributes. The harassed teacher, worried over finances, insecure in her position, nettled by students, worried over personal matters, resentful of her sex, fretful in the classroom, lacking in resources for self-entertainment, and bored with life is the one most likely to be a deterrent to the best psychological program for students and to be an impediment herself to their emotional growth. This latter type of teacher is a menace to students and should be removed from association with them.

An interesting program for mental health with particular reference to teachers was adopted by the House of Representatives of the Chicago Teachers Union in March, 1951. In its section on "Techniques for Preserving Mental Health" the following recommendations, among others, are made:

> Increased vigilance should be exercised in maintaining generally healthy working conditions for the joint benefit of administrators, teachers, and students. The following are examples: reduction of class load to allow for better attention to individual students; uniformity of records to eliminate

[8] William V. Snyder, "Recent Investigations of Mental Hygiene in the Schools," *Educational Research Bulletin*, October, November, December, 1945.

excess clerical work so that the teacher may be released to do student counseling; improved sick leave; reduction of money collections, adequate building, lighting, heating, and equipment facilities for all; comfortable teacher rest rooms; a lunch period for each teacher free from pupil supervision; and democratic, non-authoritarian procedures among administrators, teachers and students to allow for freer expression of opinion in policy making within the schools. All these together would result in over-all lessening of strain and in developing an increased respect for the individual and his problems. Thus would be created a wholesome atmosphere of well being which is a prerequisite for good mental health.

Classroom Management

If the facts were known most people would be surprised to realize how much of life is learned in the 12 years of school. There is no way of accurately gauging the influence of that experience, but it would seem of major importance as a factor in the development of social and emotional maturity. Nor is there any way of estimating the unique contribution of the school. The child grows up a product of his total environment—home, school, playground—and it can only be hoped that the influence of the classroom, as one of these environmental forces, is good rather than neutral or bad. For it is not enough that the classroom merely creates no additional problems. It has the opportunity to be a *positive* influence—to help the pupil not only *solve* some of his problems but *develop* those substantial qualities which make for successful adaptation to his environment. The atmosphere of the school and of the classroom should be such that the child will learn to tell the truth instead of lie, be courageous instead of cowardly, be polite instead of rude, be honest and not deceitful, be companionable rather than antagonistic. A classroom which seeks those positive, desirable qualities rather than merely trying to correct the undesirable ones will make a greater contribution to the integration of personality.

The teacher is, of course, the central figure in this influence. Once the teacher can accept the point of view that her influence can and should go beyond the mere dispensing of knowledge and enter the realm of total development, she then recognizes infinite possibilities in teaching. She can teach children to face reality, to seek value from things inherent in the act, to respond to inner and not imposed motivations, to seek and get a clear estimation of self without delusions, to enjoy fair appraisal, and to cultivate those study values which will

be productive of results. The influence of the teacher in these matters is very real and no less important than the home. A school seeking an integrated personality as its ultimate objective cannot fail to enlist the aid of every teacher in the accomplishment of this aim.

For example,

> In general, teachers control the behavior of the children in class by disciplinary measures based on the overt behavior of the children and without taking into account the causes of behavior. The individual teacher's attitude towards the children and the intensity of his own needs to control them determines his response, i.e., the type and severity of the discipline. Professor Ojemann thought it probable that if a teacher learned to understand the causes of behavior, his attitude toward the children would change and he would not simply inhibit the children's behavior but would deal with it in a way which would be more mutually satisfying. This hypothesis was tested and it was demonstrated that when the conflict between teacher and pupil was lessened the children did better work. The teacher had become more effective because he had approached the pupils' behavior through an understanding and appreciation of their backgrounds, ambitions and worries. The teacher thus dealt with his pupils in a dynamic rather than in a static manner.[9]

And yet, withal, it must be clear that the role of the teacher in the classroom is not that of therapist. The primary task is to preserve mental health and prevent maladjustment.[10] In this area, as in the functions described in Chapter 10, the teacher is morally and technically enjoined from making a diagnosis and prescribing treatment. All serious problems should be referred for treatment.

DISCOVERY AND SCREENING

Finding emotional or personality variants is like finding cases of organic disturbance. They have to be screened out from the rest and sent to other places where help can be given in restoring them to normal behavior. There are signs of variation in behavior just as there are signs of variation in membrane color or heart rhythm.

[9] Committee on Preventive Psychiatry of the Group for the Advancement of Psychiatry, *Promotion of Mental Health in the Primary and Secondary Schools: An Evaluation of Four Projects,* Report No. 18, January, 1951, p. 8.

[10] P. T. Hountras, "A Conference on Mental Hygiene and Teaching, *School of Education Bulletin,* University of Michigan, XXVIII, No. 7 (April, 1957), 103.

Progress in the mental health field has recently improved the ways in which disturbed children, or children with psychological problems, can be found. Self-identification tests, judgments of teachers, referrals by parents, judgments of classmates are useful in locating the maladjusted child.[11]

The teacher through the continuous observation of states and behavior, can be reasonably sure that if combinations of the following behaviors appear the child has some problem which needs the further attention of a psychologist, a personal counselor, a physician, or all three.

1. Frequent absences, tardiness, and inattention in school
2. Nervousness, irritability
3. Lying, cheating, evasiveness, "shiftiness"
4. Fearsome, withdrawing, overly shy behavior, no confidence
5. Bullying, selfishness, over-aggressiveness, quarreling
6. Dawdling, time wasting, lack of purpose
7. Sexually unacceptable conduct, "mashing," overinterest in opposite sex
8. Noncooperation and negativeness

Where such behaviors are manifest the teacher is faced with the question, *Is this a matter I can do something about or should the child be sent along for additional help?* Someone, sooner or later, must discover the causes of the disturbing behaviors. They may be in endocrine misbalances. They may be the results of disease or injury. In such instances medical advice is needed to get the probabilities of reform clearly in mind. They may be due to frustration, lack of affection or success, feelings of inadequacy, inability to face reality, disorderly thinking, or the wish to project responsibility away from self. In such cases the teacher, *if she is adequately prepared in psychology,* can help in straightening out the behavior problems.

Certainly it should be obvious to all teachers and to all principals and other administrators that behavior variations which become "discipline problems" are explainable. There is a cause somewhere. They should realize that no matter how "rough" the "kids" in the school are, overt acts have their origin somewhere and punishment imposed at the

[11] Charles A. Ullman, "Identification of Maladjusted School Children," ***Public Health Monograph No. 7,*** Public Health Services Publication No. 211, Washington, D.C., U.S. Government Printing Office, 1952.

moment is going to do no more than temporarily remove a symptom. It is like taking aspirin for a headache. The pain may go but the cause remains. If a thorough job is to be done with these misbehaving or psychologically immature children, the resources of the school and home must be brought to bear on seeking out the causes and facing up to them where they appear.

Counseling and Clinical Services

Roughly, there are three types of assistance which can be brought to children with psychological problems: (1) that given by the teacher working alone or with other teachers and parents, (2) the help of a personnel counselor to whom children may be referred by teachers or parents, and (3) the aid of a clinical psychologist or psychiatrist.

The Fourth National Conference on Physicians and Schools recommended that: "The basic mental health team in the school system should consist of a consulting psychiatrist, a psychologist, and a psychiatric social worker. In a city of approximately 75,000 or several neighboring communities with a similar population these would somewhat loosely be estimated as the basic starting needs."[12]

In this work the teacher will want to know as much as she can about mental hygiene. (Preparation in the field should most certainly be a requirement in teachers' colleges.) She will need assistance from many sources as she copes with the developing social and psychological problems within her classroom. She is in a strategic position to see the storms and irritations of group living and she can see the clashes of personalities as children learn to live together. Her attention will need to be fixed not only on the "problem child" but on understanding all the developing personalities in her class. She will want to help them all toward the maturation of normal and desirable feelings, reactions, and interests.

To facilitate this, teachers in many modern schools are using tests and surveys of personality, behavior, and social acceptance. When the results of these are known to teachers and parents, concerted assistance may be given the children in moving in the needed directions. Such tests as are used at this level of counseling service are principally

[12] Fred V. Hein and Donald A. Dukelow (eds.), *Physicians and Schools,* Report of the Fourth National Conference on Physicians and Schools, September 30–October 2, 1953, Chicago, American Medical Association, 1954, p. 33.

screens or rough indicators and are not, of course, diagnostic in a psychiatric sense.

In those schools where counselors are employed they can, if they have the insight and training, go several steps beyond the teacher in seeking causes and treatments for the problems referred to them. The visiting teacher, the dean of students, the guidance counselor, the personnel worker are included on this counseling level. They should have every technique for guidance at their disposal short of clinical psychology and psychiatry. They can do effective work with normal as well as "problem" children. They can establish the important liaison with the home which makes solutions to problems easier.

Nevertheless, such counseling service is made more effective when a psychologist, psychiatrist, or a mental health or child guidance clinic is available for school use. Once thought of only as useful for giving intelligence tests, school psychologists have widened their sphere of influence to include such functions as the clinical studying of problems of childhood and adolescence, helping with exceptional (gifted and subnormal) children, studying and counseling on behavior problems, analyzing school life for sources of strain, easing tensions on school personnel, conferring on personal problems with students, teachers, and parents, facilitating the teaching of mental hygiene in health instruction, aiding in vocational guidance programs, analyzing truancy, and performing research in the broad field of child behavior and development.

It would be helpful, perhaps, to describe step by step a sequence of events which would characterize such relationships between teacher, parent, and professional counselor. Sites and Farrar have provided us with this typical sequence, using an elementary school child as an example:

1. The teacher, after utilizing her own resources in the classroom, refers the case to the building principal for assistance.
2. If unsuccessful, after working with the teacher and the parent on the problem, the principal requests a child-study by the school psychologist.
3. The school psychologist discusses the problem with the teacher and principal; observes the child in the classroom and/or playground; administers individual psychological tests; reports his test findings and observations orally to the teacher and principal and they mutually decide on various courses of action (a) in the classroom; (b) with parents; (c) the advisability of involving another special school service.

4. A parent-psychologist-principal-teacher conference is held.
5. A report of the child-study and conclusions and a report of the parent conference is written by the psychologist and a copy sent to the school for the teacher and principal, to be filed ultimately in the child's pupil personnel folder; copies are also filed in the department of pupil personnel services.
6. If one or more additional services is involved, a case conference is arranged, including the teacher, the principal, the school psychologist, and the other special services personnel involved.
7. The psychologist writes a summary of the case conference for the records.
8. If, for example, the school social worker were the other special service involved, she reviews the recorded data; confers with the teacher and principal; observes and talks with the child. In some instances, the school social worker may clear the case with the social service clearing house to determine if the family has had any previous agency contacts.
9. Principal prepares family to accept the help of the school social worker.
10. The school social worker interviews parents individually to obtain a case history, to arrive at a working social diagnosis, and to assist families in deciding on a treatment plan.
11. If agency referral is indicated, worker calls or confers in person with agency worker, provides agency with written report of social and school data; worker then requests parents to call agency to arrange for an appointment.
12. The school social worker, in cooperation with agency worker, keeps school informed of developments in the case and provides school with oral and written reports of any information needed to better understand and help the child and parents.
13. As case progresses in treatment the school social worker usually acts as liaison between school and agency to keep each informed of significant developments.[13]

INSTRUCTION IN MENTAL HEALTH

Mental health is usually thought of as emphasizing the problems of intellectual or emotional adjustment, worry and security, fear and bravado. It involves a study of acceptance and rejection, of prejudice and selfishness, of the alibi and projection, and of jealousy and rage.

[13] Walter Sites and Marcella S. Farrar, "Toward Better Adjusted Children—Schools and Community Agencies Can Work Together," Welfare Federation of Cleveland, October, 1957, pp. 28–30.

It includes the spectrum of human behavior and submits it for analysis, discussion, and improvement as one would deal with the easier area of "physical" things. Mental health must be a consideration of every teacher. Objectives in terms of child development must be so clear to all that the social and psychological development of children becomes as much a concern of all as their reading ability or success in sports.

In terms of specific teaching as discussed in Chapter 4 there is ample material for several years of instruction in all schools. There is a multitude of human perplexities from which to choose as a base for discussions. Teachers of health instruction can and should give ample consideration to these matters. Students will not be reticent in revealing their problems of anxiety and uncertainty, of emotional stress and ambition, their difficulties involving the search for techniques of how to get along, how to master their world, how to make friends or to fall in love, how to succeed. The problems are there. Their discovery is as easy, and as difficult, as the discovery of problems in other areas of living. Their use as classroom material is important and fruitful.

The clue to the selection of material to be taught in this area is the same as it is for other areas in healthful living, namely, the selection and discussion of the actual dynamic problems of the students. As discussed in Chapter 4, no cursory treatment of the anatomy and physiology of the nervous system is going to have much bearing upon the lives of students. On the contrary, their problems of group adjustment, of relationships to law and order, to religion and war, to marriage, and to changing beliefs—these are the sources of teachable material for the classroom.

Obviously such teaching ramifies throughout the curriculum of the school. Mental health is not something one learns about wholly from a specific "course" in it or from a unit or two in a health course taught twice a week in the senior year. The student is forming his points of view, conditioning his behavior, developing his relationships with the world of people and of things constantly throughout the day. Appropriate adjustment to life and the development of the characteristics of integration are as affected through one curricular area as another.

Recognizing this all-school influence upon attitude, behavior, and personality, the Committee on Preventive Psychiatry of the Group for the Advancement of Psychiatry has given a report on four important

projects aimed at promoting mental health through teaching.[14] One of them, the so-called Ojemann project, utilized the social studies as hosts for the correlation of material on adjustment and is sketched as follows:

The materials that have been fully developed may be indicated as follows: (a) *in the seventh grade* in the course in community civics, community problems are analyzed in terms of the dynamics of human behavior, (b) *in the eighth grade* the student examines his own experiences at school, at home, in his play with others, in his leisure and in maintaining his general health, and plans his course of action based on an analysis of causes. There is also a discussion of family relationships in the home economics course, (c) *in the ninth and tenth grades* where world history and the history of major social institutions are taught, not only the major events are learned but each civilization or institution is examined to ascertain how far it meets the major human needs, (d) *in the eleventh grade* where American history and problems are taught, there are units on the conservation of human resources including the nature, extent and causes of mental illness; the care of the sick; and the nature of the program of prevention—with stress on mental hygiene, (e) *in the twelfth grade* where modern social problems are taught, there is a series of units on courtship, preparation for marriage and parenthood using what had been previously learned about causes of human behavior.[15]

Other projects developed in an elementary school have been described as follows:

FOR KINDERGARTEN AND EARLY ELEMENTARY LEVEL

Mental Health Understandings

1. Importance of obedience to parents and teachers
2. That it is not healthful to resort to emotions to get one's way
3. The meaning of commands given by the teacher
4. The values of playing fairly
5. The difference between winning and losing
6. The understanding that it is well to be a good follower as well as a good leader

Attitudes

1. Feels that he is part of the group
2. Respects personal feelings of others

[14] Report No. 18, January, 1951, 1035 Fifth Ave., New York 28, N.Y.

[15] Professor Ralph H. Ojemann, State University of Iowa, Iowa City, Iowa.

Skills

1. Creates self-confidence by using good manners and cleanliness as a guide
2. Practices acceptable social manners at all social functions
3. Shares with others in the group
4. Plays agreeably with children of both sexes
5. Avoids rough play
6. Helps others when they are hurt

FOR LATER ELEMENTARY LEVEL

Mental Health Understandings

1. The story of his own development
2. That there are differences between boys and girls
3. Why regular hours of sleep are important
4. How to relax and practice relaxation

Skills

1. Plans his own day including relaxation
2. Makes a daily schedule to get the most done with the least fatigue
3. Eats unhurried meals
4. Follows a health program to prevent tiredness
5. Gets regular hours of sleep each night
6. Relaxes before going to bed
7. Sleeps in a quiet, ventilated place
8. Has his own bed
9. Rests for a while after meals
10. Rests for a while after strenuous exercise
11. Develops a hobby for relaxation
12. Develops confidence in himself
13. Plays in a group
14. Gets along well with the family members
15. Gets along well with older people
16. Gets along well with schoolmates
17. Gets along well with teachers[16]

Physical Education Including Athletics

"Recreation has not only played an important part in the treatment program of many mental illnesses but it has been a considerable factor in enabling former patients to remain well, therefore, psychiatrists believe that recreational activity can also be a valuable preventive of mental and emotional ill health.

[16] ***Health Education Study, Whittier Elementary School,*** Minneapolis Board of Education, 1950.

Good mental health is directly related to the capacity and willingness of an individual to play. Regardless of his objections, resistance, or past practice, any individual will make a wise investment for himself if he does plan time for play and take it seriously."[17]

The area of play has long been underrated as an influence for guidance in meeting experiences of success and failure, joy and disappointment. A well-conceived program of physical education will give its participants an opportunity to feel the satisfactions of achievement, and such satisfactions are of prime importance to many. There is opportunity within physical education, when its activities are carefully selected, for cultivating the objective and extroverted outlook as contrasted to the subjective and often the introverted. There is ample opportunity to establish status among one's fellows, to understand self, and to find those satisfactions which come from a feeling of identification with a group. Above all, there is opportunity to have fun, to enjoy life, to know pleasure. A physical education program should not be grim business—sober, formal, and serious. Nor should it be angry and irritating as it sometimes becomes when the competitive contest incites bad behavior. Children need and deserve the free, joyous expressions which are so characteristic of dancing, singing, and games.

Many will find in physical education, including its athletic program, their only opportunity for the cultivation of leadership. The childhood game is replete with experiences of "being leader" and its converse, being just "one of the team." Such experiences should be seized upon by the school and developed for all they are worth. To view physical education as only a strength-building or physical-fitness program is to overlook its richest potential—that of contributing to the psychological and social development of its participants. Motor activities, games, sports, and athletics of all kinds can be rich educational and developmental experiences when they are conducted not for the glorification of the coach but for the enrichment of the lives of the students.

MENTAL HEALTH CLINICS

Mental health and guidance clinics are slowly developing in communities, sponsored sometimes by official agencies such as state departments of health and sometimes by voluntary agencies or groups. These

[17] William C. Menninger, "Recreation and Mental Health," *Recreation*, XLII (November, 1958), 341–345.

clinics are doing pioneer work in the detection and solution of the psychological problems of childhood. They may be publicly or privately supported and may include pediatricians, dentists, psychiatrists, psychologists, nurses, social workers, and general medical practitioners. Their work is essentially clinical, the individual rather than the mass is within their focus, and their efforts at preventing and solving problems which may be psychologically engendered, or have psychological expressions, are hopeful. The school health personnel should avail themselves of such clinical services wherever possible.

The following functions are frequently performed by such services or clinics.

1. Consultation service to assist school personnel and other responsible persons in the community in developing appropriate preventive mental health programs to meet their needs.
2. Case finding, screening, and evaluation service to identify children with behavior disorders and to determine the degree of disturbance.
3. Individual counseling service with teachers, parents, and children to modify attitudes and behavior which lead to problem situations, with referral to the child-guidance clinic for more thorough diagnostic study, or to other community agencies as indicated.
4. Group therapy with parents to help parents gain in understanding of their own and their children's problems, and to modify early sources of disturbances.
5. Group therapy with children, particularly adolescents, to provide an opportunity for them to work through their problems of personal and social relationships more satisfactorily.
6. In-service training for school personnel to present basic concepts of preventive mental health through case conferences, group-discussion leadership training, and other types of study groups.[18]

SELECTED READINGS

There is a vast and growing literature on the subject of mental health. Some excellent books have appeared in aid to educators who are alert to the problems. The footnotes in this chapter contain many significant articles or books, and some other helpful sources are listed in Chapter 8. These are also valuable to teachers:

[18] Herbert R. Domke and A. D. Duchmueller, "Preventive Mental Health Services in Public Health," *Children*, III, No. 6 (November–December, 1956), 229.

American Council on Education, *Helping Teachers Understand Children,* 1945.

Association for Supervision and Curriculum Development, *Fostering Mental Health in Our Schools, 1950 Yearbook,* Washington, D.C., 1950.

Bellak, Leopold (ed.), *Psychology of Physical Illness,* New York, Grune and Stratton, 1952.

Bullis, H. Edmund, "An Educational Program for the Development of the 'Normal' Personality," *American Journal of Psychiatry,* CIX (1954), 375–377.

Bullis, H. Edmund, *Human Relations in the Classroom,* Course III (recommended for eighth or ninth grade), Wilmington, Del., State Society for Mental Hygiene, 1951.

Cleugh, M. F., *Psychology in the Service of the School,* New York, Philosophical Library, 1951.

Crow, Lester, and Crow, Alice, *Mental Hygiene in School and Home Life,* Second Edition, New York McGraw-Hill, 1951.

Davidoff, Eugene, and Notzel, Elinore S., *The Child Guidance Approach to Juvenile Delinquency,* New York, Child Care Publications, 1951.

Donahue, Wilma, *Education for Later Maturity,* New York, Morrow, 1955.

Dunbar, H. Flanders, *Emotion and Bodily Changes,* Fourth Edition, New York, Columbia University Press, 1954.

English, O. S., and Pearson, G. H. J., *Emotional Problems of Living,* New York, Norton, 1945.

Frank, Mary, and Frank, Lawrence K., *Your Adolescent at Home and in School,* New York, Viking, 1956.

Gallagher, J. Roswell, and Harris, Herbert I., *Emotional Problems of Adolescents,* New York, Oxford University Press, 1958.

Glassberg, B. Y., "St. Louis' Program of Mental Health," *Journal of School Health,* XXV, No. 6 (June, 1955), 168.

Gordon, Ira J., *The Teacher as a Guidance Worker,* New York, Harper, 1956.

Gumpert, Martin, *The Anatomy of Happiness,* New York, McGraw-Hill, 1951.

Hughes, Margaret M. (ed.), *The People in Your Life: Psychiatry and Personal Relations,* New York, Knopf, 1951.

Hymes, James L., *Pound of Prevention,* New York, State Society for Mental Health, 1947.

Hymes, James L., *Teacher Listen–The Children Speak,* New York, National Association for Mental Health, 1950.

Johoda, Marie, *Current Concepts of Positive Mental Health,* New York, Basic Books, 1958.

Kotinsky, Ruth, and Witmer, Helen L., *Community Programs for Mental Health: Theory-Practice Evaluation,* Cambridge, Mass., Harvard University Press, 1955.

Kurgman, Morris (ed.), *Orthopsychiatry and the School,* New York, American Orthopsychiatric Association, 1958.

Kvaraceus, William C., "Discipline in the Classroom—the 1956 Approach," *The Educational Trend,* New London, Conn., Croft Publications, January, 1956.

Lemkau, Paul V., *Mental Hygiene in Public Health,* Second Edition, New York, McGraw-Hill, 1955.

Lindgren, Henry Clay, *Mental Health in Education,* New York, Holt, 1954.

Menninger, Karl A., *The Human Mind,* New Edition, New York, Knopf, 1955.

Menninger, William C., "Self-Understanding for Teachers: How Can We Come Closer to Emotional Maturity?" *N.E.A. Journal,* September, 1953.

Mental Health Materials Center, Inc., 1790 Broadway, New York 19, New York.

Mitchell, Lucy Sprague, *et al., Know Your Children in School,* New York, Macmillan, 1954.

Montagu, Ashley, *On Being Intelligent,* New York, Schuman, 1951.

Murphy, Lois Barclay, "Effects on Child-Rearing Patterns on Mental Health," *Children,* III, No. 6 (November–December, 1956), 218.

National Health Council, *Steps for Today Toward Better Mental Health,* Report of the Council's 1957 National Health Forum, New York, 1957.

National Institute of Mental Health, *Mental Health Motion Pictures,* A Selective Guide 1952, Supplement 1956, Washington, D.C., U.S. Department of Health, Education and Welfare, U.S. Government Printing Office.

National Society for the Study of Education, "Mental Health in Modern Education," *54th Yearbook,* Part II, Chicago, University of Chicago Press, 1955.

Nichtenhauser, Adolf, Coleman, Marie L., and Ruhe, D. S., *Films in Psychiatry, Psychology and Mental Health,* New York, Health Education Council, 1953.

Novick, Rudolph G., "How Teachers Can Build Mental Health," *Today's Health,* 1951, American Medical Association.

Polatin, Phillip, *The Well-Adjusted Personality: Preventive Psychiatry for Everyday Use,* Philadelphia, Lippincott, 1952

Rankin, Paul T., and Dorsey, John M., "The Detroit School Mental Health Project: A Five-Year Report," *Mental Hygiene,* XXXVII (April, 1953), 228–248.

Redl, Fritz, and Wattenberg, William W., *Mental Hygiene in Teaching,* New York, Harcourt, Brace, 1951.

Robinson, Francis P., *Principles and Procedures in Student Counseling,* New York, Harper, 1950.

Rogers, Dorothy, *Mental Hygiene in Elementary Education,* New York, Houghton Mifflin, 1957.

Schneider, Elsa, *How Children and Teacher Work Together,* Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, 1952.

Strang, Ruth, *Helping Children Solve Problems,* Chicago, Science Research Associates, 1953.

Ullmann, Charles A., *Health Through the Schools,* Bethesda, Md., National Institute of Mental Health, 1957.

Ullmann, Charles A., *Mental Health Screening of School Children,* Bethesda, Md., National Institute of Mental Health.

Vaughan, Wayland F., *Personal and Social Adjustment: Foundation of Mental Health,* New York, Odyssey Press, 1952.

Watson, Helen T., "Some Effects of Our Schools on the Mental Health of Children," *The Journal of School Health,* XXV, No. 7 (September, 1955), 180.

Wattenberg, William W., *The Adolescent Years,* New York, Harcourt, Brace, 1955.

Witmer, Helen Leland, and Kotinsky, Ruth, *Personality in the Making,* The Fact-Finding Report of the Midcentury White House Conference on Children and Youth, New York, Harper, 1952.

Witty, Paul A., Skinner, Charles E., *et al., Mental Hygiene in Modern Education,* New York, Farrar and Rinehart, 1939.

White, Robert W., *The Abnormal Personality,* Second Edition, New York, Ronald Press, 1956.

Wolf, Katherine M., *The Controversial Problem of Discipline,* New York, Child Study Association of America, 1953.

Wrightstone, J. W., "Measuring the Social Climate of a Classroom," *Journal of Educational Research,* XLIV (1951), 341–351.

— 13 —

Nutrition and Dental Programs

The school is interested in the nutritional status of its children because it realizes that undernourished or malnourished children do not progress educationally as well as well-nourished children. In these days of manufactured and processed foods it is important to teach the elements of good nutrition in order to provide adequately for normal growth. The school is also aware that children kept at school during the noon hour prosper better from well-balanced lunches than from poorly planned ones. Thought and action directed at the nutritional problem thus take the form of providing noon lunches, midmorning lunches, and deficiency meals for those undernourished and unable to secure adequate nourishment at home, and an instructional program in which the problems of nutrition are discussed. Attention is given to children whose nutritional status is sub-par, and various educational and curricular adjustments are made to cope with malnutrition.

There are many factors in home and community life which complicate this problem enormously. Nutritionists agree that were it not for the competing attractions which lure many persons, particularly children, away from a rational diet we would have healthier children in our schools. Apparently resources are available to feed a population well; it becomes a matter of educating parents and children and providing economic resources which make the purchase of good food possible and its use desirable.

Speaking generally it may be said that the population is well fed. Compared to people in many other countries the family in the United States is in a favorable position nutritionally. Nevertheless, there are many hundreds of thousands of parents and children who have poor

dietary practices, who have a low intake of vegetables and fruits, who rely too heavily upon sweets, and who do not know how to choose food for their own good. There are far too many persons omitting breakfast, choosing a poor lunch, overeating, following some nutritional fad or other, or in some other way handicapping themselves because of nutritional stupidity.

THE ROLE OF THE SCHOOL

The school has a responsibility to accept in this regard. It not only must discharge its traditional educational functions in regard to the problem but, because millions of children eat about one-fourth of their meals on school premises, must provide a demonstration of food preparation and selection which can be taken as a whole. The school is in a position to influence nutritional behavior even though it has stiff competition from commercial advertising, family customs, ignorance, and, perhaps above all, individual taste, which, when selection is limited, does not always lead a person to "what's good for him."

Objectives

The objectives of a school nutrition program are simple and clear. They are:

1. To inform the school population about the nutritional needs for best growth and development.
2. To provide an attractive and adequate variety of food in the school lunch program.
3. To seek correlation between home and school with reference to nutrition teaching and practice.
4. To solve individual problems of faulty practice, insufficiency, or malnutrition.

The Program of Action

To attain these objectives a program of action containing three principal features is instituted. These are a school lunch program to represent the best in nutritional practice, a program of instruction for all children in the best of nutritional information, and a program of appraisal and guidance for individual students in reference to their own nutritional status.

The Lunch Program

The school lunch program came into being as a result of circumstances which were partly humanitarian, partly economic, and partly political. Before the National School Lunch Act was signed by the President on June 4, 1946, it seemed implausible that the feeding of children in and by the schools would ever become a part of governmental activity, particularly at the federal level. To many this seemed the epitome of the welfare state.

However, communities had had experience with feeding school children during the economic depression of 1929–1935, and the federal government through its executive agencies, such as the Children's Bureau, had given encouragement to the principle that where need existed official agencies should step in with aid. Surveys of the need were made. The nutritional state of school children was described in its true terms and the public began to realize that there were literally millions of children who were badly nourished at home, for one reason or another, and that their growth, development, and educational progress were being definitely retarded.

Should the school feed them? Should they be fed at school from funds provided elsewhere? Was this a private or public matter? These were, and still are, in some quarters, disturbing questions.

Coincident with the national awakening to the nutritional needs of children came the move to consolidate schools. One-room schoolhouses disappeared in some states at the rate of three or four hundred a year. New consolidated schools were built, children were brought to them by bus, and it was not feasible to have them return home for lunch. Since the children had to be fed at school, many rural and small city schools joined the metropolitan schools in establishing a school lunch service wherein meals were provided at cost.

At about this time the nation was changing from a war economy to a peace economy, and it was not unusual to find surplus food supplies piling up to a threatened loss to the producers. What could be more reasonable than to have the government buy this food and redistribute it on a matching basis to communities? Economically this was sound, for it solved some of the farm problems, kept prices up, and helped to avert agricultural disaster. It thus became politically wise also, and neither political party could resist the double appeal—from the farmer and from needy school children.

So the school lunch program became a part of our educational scene, and in the years of its existence has become important nutritionally and significant educationally. In its essence the program as operated by the Bureau of Human Nutrition of the United States Department of Agriculture requires local authorities to sponsor and be responsible for the program, and to provide facilities, equipment, supervision, labor, and additional funds needed for the program. Expenditures for such items may count toward the matching of federal funds. A reasonable value may be put on goods and services contributed to the program. A small amount may be charged the children for the lunch if they are able to pay.

The school lunch should provide nutritive values as well as satisfaction and enjoyment to the student. It should also help in the development of good eating habits. As an incentive for providing a wholesome lunch, the highest rate of reimbursement is given for the complete lunch. This is known as Type A and consists of the following foods:

1. One-half pint of whole milk as a beverage
2. Two ounces of lean meat, poultry, fish, or cheese, or one egg, or one-half cup of dry beans or peas, or four tablespoons of peanut butter
3. Three-fourths cup of vegetables or fruit, or both
4. One or more portions of bread or muffins or other hot bread made of whole-grain cereal or enriched flour
5. Two teaspoons of butter or fortified margarine

It is permissible to meet the protein requirement of Item 2 by serving one-half the quantities of each of two of the foods.

If a school has limited lunchroom facilities it may contract to serve a Type B lunch, which provides about two-thirds as much food as the Type A lunch. The Type B lunch should be supplemented by food brought from home. Schools that have no lunchroom facilities may wish to provide milk for the pupils. Type C consists of one-half pint of whole milk as a beverage.[1]

This program has made possible better lunches for children in nearly any school anywhere in the nation and supplements constructively the existing programs already established in thousands of schools.

Investigations have shown (1) that school lunch programs allow for considerable variety of food prepared, (2) that they may fail to meet

[1] U.S. Department of Agriculture, *Planning Type A School Lunches*, Washington D.C., Superintendent of Documents, U.S. Government Printing Office, 1955.

the minimums established by the National Research Council for School Lunches, and (3) that children having school lunches have better diets than children not having them, especially with respect to calcium, ascorbic acid, and vitamin A requirements.[2]

Variations of the Basic Plan

Since its inception, variations in the basic plan have appeared. Without lowering nutritional standards, some schools and some city systems have instituted breakfast plans. Others serve à la carte lunches, some do not serve a full lunch but supplement the home-packed lunch. Many schools are confronted with the problem of whether to serve milk or fruit juice during the morning or afternoon and whether to provide snack bars dispensing soft drinks and candy bars.

Principles of Operation

Experience and research have shown the following to be good practice:

Balanced meals. Every lunch served should be nutritionally balanced in accordance with the best in scientific menu planning.[3] Millions of school children are inadequately or unwisely fed at home and the school lunch has come to mean, in many places, the provision of at least one-half the caloric and vitamin need of these children. Making up for the deficiency in these home diets becomes as important a school enterprise as the establishment of special classes for children handicapped in other ways.

Minimum standards of supply. In elementary schools, serving one-half pint of whole pasteurized milk and a cracker is generally considered the minimum midmorning lunch. At noon one hot vegetable or meat dish is the minimum, but preferable is the full meal with choices of food as found in the larger school cafeterias.

Equipment. The bibliography at the end of this chapter carries two

[2] For example, Milicent L. Hathaway, *et al.*, "School Lunches: Their Nutritive Value and Relation to the Health and Diet of Children," *American Journal of Public Health*, September, 1950, p. 1096.

[3] Space does not permit description of scientifically planned school lunches. Interested readers should consult the bibliography at the end of the chapter for guides and secure all the literature from the U.S. Department of Agriculture, from the Bureau of Human Nutrition, and from the divisions of nutrition in the local state health departments.

or three references containing standards for kind and quantity of equipment needed to operate different kinds of food service facilities.

Sanitation. The serving of food in school requires (but sometimes fails to get) perfection in food sanitation. Essentials include good refrigeration, nonporous and undamaged dishes, tables and counters without cracks and scrubbed clean after every using, and effective sterilization equipment for all eating utensils. Cooking and serving personnel must be free of communicable disease and must comply with the state and city sanitation codes for food handlers. State departments of health or of education frequently issue detailed standards for the sanitation of lunchrooms, but perhaps the best reference readily available to school personnel is Chapter 7 on the school lunch in the book *Healthful School Living*, published by the N.E.A. and the A.M.A.[4]

Personal sanitation. Hand-washing and toilet facilities should be liberally supplied and should be convenient for users of the lunchrooms. Children must be taught, even required, to use them before eating.

An educational opportunity. The school lunch can go far beyond the important function of feeding hungry children. It can influence eating behavior of students and adults alike. If those in charge will devote thought and planning to the educational implications, courtesy, acceptable table manners, and polite living in the lunchroom will become an important part in the education of a citizen.

For example, the United States Office of Education[5] suggests that children help plan and prepare the lunch menus, discuss the balance of meals, be given guidance in food selection, be supervised and counseled on behavior at the table, make the sanitation and food handling in the cafeteria a matter for investigation and discussion.

Particularly useful is any plan which shares with the home the responsibility of planning and preparing the school lunch by informing all parents of the menus from week to week.

Administration. Over three-fourths of the existing school lunch programs are controlled and run by the school administration. This is as it should be. In most places where it has been tried, the use of catering concessions has been found to be an unsatisfactory arrangement.

[4] The Joint Committee on Health Problems in Education, *Healthful School Living*, Washington, D.C., National Education Association and the American Medical Association, 1957.

[5] *School Lunch and Nutrition Education*, Bulletin 14, Washington, D.C., Federal Security Agency, 1951.

In large schools it is necessary to employ specialized school lunch personnel. In small schools in which the employment of specialized professional personnel is not practicable, the responsibility should be shared by the various school departments. The home economics teacher or the teacher best suited to the job may be responsible for planning menus and possibly for general supervision of the program. Other school departments should make the kind of contribution they are qualified to make. For example, the commercial department may supervise the work at the cash register, keep the financial records, and make the deposits. The art department might contribute by helping to make the dining room attractive and by making necessary signs. Still other staff members may eat with the children. In some schools upper-grade or older pupils may take some special responsibilities. An active school lunch committee representing staff, parents, and students is an asset to any school lunch program.

The educational authorities should be responsible for the selection of the school lunch manager and other personnel. The school lunch manager is responsible for achieving a program (1) which is an integral part of the school's curriculum and health services, and (2) which operates efficiently to provide an adequate and nutritious lunch under sanitary, attractive, and friendly conditions and at the lowest possible cost. The manager must also be able to train and supervise the other school lunch personnel that he has helped to select. With these responsibilities, the manager must have an understanding of nutrition, of food buying, and of food preparation. He should also have the ability to work with all other personnel in the school.

The size of the program determines the kind of school lunch manager to be employed. For a large school lunch program in a school system or in an individual school, the manager should have completed a four-year college curriculum with emphasis on food, health and nutrition, quantity food preparation, and school lunch management.

If it is financially impracticable to employ a full-time school lunch manager, an appropriately trained graduate of a vocational high school or technical institute may function satisfactorily as a cook-manager: (1) under the supervision of a qualified state, district, city, or county school lunch supervisor; (2) under the direction of the home economics teacher whose schedule allows for this; or (3) under the principal of the school in which there is no one with professional training in school lunch man-

agement. Necessary additional training should be given to such cook-managers through in-service training programs, workshops, or similar types of training experience, directed by supervisors who are well trained in quantity food methods and lunchroom management. . . .

There are five principal sources of school lunch funds: (1) local tax funds, (2) state aid, (3) federal assistance through the Department of Agriculture, (4) receipts from sale of lunches, and (5) donations from local groups. In addition to these funds, a substantial additional aid is provided through donations of agricultural commodities and other foods purchased by the Department of Agriculture in connection with the farm price support program. State aid earmarked for school lunches is provided in some states. Many school boards limit the contribution from school district general funds to provision of equipment and personnel, since the cost of food is generally paid from receipts from sales of lunches and funds from the federal government. Many school lunch programs are operated without federal assistance.[6]

Special Problems

Much debate has centered around the serving of milk at both lunch hour and midsessions. Some schools have served skimmed milk because it is cheaper. The Joint Committee on Health Problems in Education has this to say on the matter: "Whole milk is preferable to any other kind and may or may not be homogenized. Chocolate drink made from skim milk is less valuable from the nutritional viewpoint, because it has less butterfat and vitamin A than whole milk. It does, however, contain the same minerals, vitamin B, and protein, plus sugar and fat from the chocolate. The sweetness of chocolate milk or chocolate drink may lessen the appetite for other foods."[7]

Even more controversial is the matter of the sale of candy and soft drinks at school. Pressures of various kinds from commercial concerns, needy organizations, and students sometimes make it difficult to resist the installation of vending machines even though there is serious question as to the nutritional appropriateness of these foods. Their deteriorating affect upon teeth is incontestable.

To sell or not to sell sweets and soft drinks becomes a matter of school policy involving parents, board members, administration, faculty, and

[6] *Ibid.*, pp. 7, 10.

[7] The Joint Committee on Health Problems in Education, *op. cit.*, p. 120.

students. No edict or plan to prohibit the sale of these things will be particularly successful until the reasons for the prohibition are understood by all. If there is a disposition on the part of some to curb the sale, then the matter could well become a matter for study by the health council for recommendation to the school community. Such was the case in Minneapolis; the essential portions of the program adopted are:

1. Nutritional Education. That a sound program of health education be developed regarding the use of sweets and soft drinks. Our list of health goals includes understandings, attitudes, and skills directed toward this problem. These goals emphasize that excessive use of sweets, including candy, soft drinks, gum, and rich desserts, increases the amount of dental caries, and that excessive use of sweets prevents people from eating an adequate, nutritious diet. In our health education program, we try to develop on the part of students the desire to keep to a minimum the use of sweets in the diet, and try to develop skills in the selection of foods and drinks which serve nutritional needs.
2. Prohibitive Measure. That the sale of soft drinks be eliminated during school hours.
3. School Encouragement in the Practice of Nutritional Health. That schools be encouraged to make every effort possible to substitute other beverages for soft drinks during afternoon and evening activities. This can be done by creating situations in which students see alternatives and make plans for their parties in terms of desirable health and social values.
4. Correct Time for Offering of Sweets. That candy not be offered in competition with the noon meal in any school. The one exception applies only to senior high schools, where if candy is sold, it must be sold only through the lunchroom after the noon meal has been eaten.
5. Reduction of Sweets in the Diet. That candy sales, including candied apples, etc., mid-morning and mid-afternoon, be eliminated, as an excessive amount of candy interferes with appetites for the following meal and is injurious to teeth.[8]

The Program of Instruction

Matching the program of action just described to a program of instruction in the health classes, as well as in other curriculum areas where suitable, will materially strengthen the total program. Such instruction, as part of the unit plan in direct health teaching or in correla-

[8] Minneapolis Public Schools, *Nutrition: The Sale of Candy and Soft Drink in the School* (a school policy) approved by the superintendent, August, 1950.

tion with such areas as home economics, science, or physical education, can be developed in accordance with the principles set forth in Part II. That there is need for such instruction is eloquently proved by observing the food buying and eating practices of many people. Dental decay, malnutrition, fatigue, and overweight are but a few of the maladies which can be attributed to inappropriate education in nutrition. The number of people who pursue dietary fads is alone sufficient to warrant some intelligent treatment of the subject in schools.

Hence a program of instruction which begins with the recognized problems of people and brings the evidence of science to bear upon those problems is a responsibility the school should not miss. Such a program would include appropriate experience at all levels with problems such as the balanced diet, the need for variety, selection of food, planning meals, food deficiencies, food and weight and disease, variations in national food habits, and food sanitation.

Appraising Children

Malnutrition among school children in some communities is marked. Modern pediatricians and school physicians seek to identify it by determining the specific food deficiencies which produce it. Such malnutrition produces fatigue, retards growth, development, and intellectual awareness, and lowers resistance to disease. It is a serious school problem in many localities and deserves the development of a program to combat it. Such a program would include these factors:

Teachers should be prepared to note the signs of malnourishment or undernourishment as a part of the continuous observation of the health of their children. They should be alert to paleness irregularities in the steadily advancing weight curve, plateaus in weight, chronic fatigue, staring eyes and anxiety in the facial expression, decayed teeth, nervousness, restlessness, and inattention.

Upon the presentation of these observable signs, the teacher should report the situation to someone who can do something about it. The school nurse, the visiting teacher, a local social agency, or the local health department is in a position to visit the home to discover the causes of the malnutrition and to work out a program of restitution.

There are no tests of malnutrition yet developed which are scientifically absolute in their diagnostic infallibility. The age-height-weight averages are no longer considered useful. The ACH index, a soft tissue

index, is helpful but not simple to apply. Malnutrition as a diagnosis can best be arrived at only by a physician, preferably a pediatrician, who by examining for membrane color, skin texture, signs at the corners of the mouth, as well as all the deviations noted above, can arrive at some conclusion.

Whatever the state of nutritional deficiency someone must do something about it. Obviously, the place to begin is at the removal of the cause. The possible causes of malnutrition among children are faulty diets, insufficient amount of food at meals, no breakfasts, no lunches, too little of crucial foods such as milk and vegetables, too many sweets, too little sleep, overwork, fatigue, physical defects, and disease. The specific cause or causes must be found in each child. They will not be the same in every instance and thus the method of correction will vary. Much of the correction will depend upon a successful alteration of the home environment: meals, especially breakfasts, must be improved, the child must have better sleep, the chronic infections must be removed. Since such family rearrangements are frequently difficult to make, emphasis should be placed on the many things which can be done in the school program. Attention to individual cases should be given. Supplementary food midmorning, midday, and midafternoon can be supplied. Suggested menus may be supplied from the school to the home. Placement in special classes may be necessary where feeding and rest schedules differ from those of other children. A constant check of nutritional status, noting improvement or retrogression, can be undertaken, and the medical services of the school may be used to examine and advise insofar as their limitations will permit. The principal use of such medical services remains one of discovery and referral.

SCHOOL DENTAL PROGRAMS

Dental decay and loss of teeth are major health problems. Dental education, care, and treatment are urgently needed in every segment of the population. Gutman reports that over 95 percent of the population shows evidence of having dental disease.[9] In some localities as high as 50 percent of 2-year-old children have one or more decayed teeth. By the time children reach school age, they average three or more primary

[9] Ross E. Gutman, "The School Dental Health Service Program," *The Journal of School Health*, XXVII, No. 3 (March, 1957), 69.

teeth decayed and many of them show evidence of decay in the permanent teeth. By the time the child reaches the age of 16 he averages 7 teeth decayed, missing, or filled.

These facts are an appalling commentary on our way of life. Such neglect means not only dental decay but, when carried into adulthood, can also mean the early acquisition of false teeth and even the dental irregularities associated with such serious conditions as carcinoma of the mouth—all of which could have been prevented to a large extent through earlier care.

Principles of School Dental Programs

School dental programs are evolving from rather simple tongue-depressor inspections of teeth to complete modern services of prevention, education, and care. There seems to be considerable agreement among both the official health agencies and the nonofficial groups, such as local, state, and national dental societies, that (1) dental care should be available to all regardless of income or geographic location, (2) research that might shed light on the prevention and control of dental diseases should be encouraged, (3) dental health is the responsibility of the individual, the family, and the community—in that order, (4) wherever school or community provides dental care it is preferable that adequate care be given rather than limited services to large groups, (5) the school is in a strategic position to organize within its scope a complete program of dental health education and to assume leadership in organizing community resources for dental care for all children, and (6) schools should motivate children to go to their family dentist or to a dental clinic.

Minimum Services

There is, of course, considerable debate as to how far the school should go in the development of a complete program within the school. It must be borne in mind that what the school can provide and pay for from public funds is dependent wholly upon legislative permissions. Without enabling legislation the school can provide no services of any kind at public expense. If, however, state laws permit the employment of dental personnel and the establishment of dental care programs, then the length to which the school goes to provide dental care at public expense depends upon the facility with which school and dental personnel in the community can agree. No school should attempt

to work out a dental program without assistance from the local or state dental society. The school program, to avoid error and waste, should be developed as an integral part of a whole local program for the entire population.

The principal step in determining the scope and limitations of dental services provided by schools must be the establishment of objectives. What does the school believe should be done about children's teeth? What sort of care are children entitled to? What care is necessary for their best interests? If these can be established it will become clear what services are necessary to attain them. Such objectives as these might be considered:

1. Dental examinations by dentists at least once a year.
2. The prevention and treatment of any defects and disease found.
3. Professional cleaning of the teeth twice a year.
4. Removal of dental irregularities and impediments.
5. Personal cleansing of teeth daily.
6. A dietary regimen arranged in light of best current information concerning dental care and food.

If the school recognizes the desirability of attaining each of those objectives it must then determine which ones it may deal with directly, which it must ignore, and on which it may enlist the aid of other agencies or persons.

The school must choose, therefore, from the variety of services available in dentistry and education. Here, again, there must come about an affiliation of the services of two professions for the best interests of children. Such minimum services have been described as:

1. Periodic examination, including roentgenograms (X-ray pictures) and prophylaxis.
2. Restoration of carious teeth, with silver amalgam or silicate fillings or with metal castings, if necessary.
3. Pulp treatments, including cappings and partial or total pulpectomies when indicated.
4. Anesthesia, whenever necessary for control of pain.
5. Preventive orthodontic appliances, to maintain space and prevent malocclusions.
6. Prosthetic appliances, when needed, to replace missing teeth, provide function, and improve appearance.
7 Treatment of periodontal disease and infection of the mouth.

8. Extraction of hopelessly diseased, impacted, or supernumerary teeth.
9. Surgical procedures, whenever necessary for the health of the child.
10. Education of parent and patient to encourage the application of scientific knowledge for the prevention of disease and the promotion of health.[10]

This complete program of services is available in the private practice of dentistry and also in many of the public dental clinics established in larger communities and hospitals. It would be unusual in the extreme to have all such services currently established in schools at public expense or at part-public, part-private expense. Currently, most school dental programs, where they exist, are concerned only with numbers 1 and 10 in the list of minimum services, although occasionally items 2 and 3 and 8 are included. There are a few schools which embrace the entire ten-point program of minimum services. *The extent to which these services are developed will depend upon the availability of public funds and upon the local point of view about the extension of such services in the school.*

Administration and Program

Regardless of the extent to which dental services are rendered in schools there are certain basic tenets of administration which, if followed, will make for more effective programs. These are:

1. *The services of dentists and dental hygienists in school programs should be paid for.* Free examinations or treatments at school or charity work under school auspices should not be expected. "Payment to dentists participating in the examination or service phase of the program may be made on full time, part time, hourly or unit of service basis. Salaries for full time or part time dentists and fee schedules should be on a level consistent with the provision of high grade dental service. The fee schedule of the Veterans Administration for dental service may be used by local groups as a basis for determining dental fees or the feasibility of setting up a facility best suited to the community."[11] Nor should dentists or any dental supply offices be expected to supply materials for less than cost. The school dental program must be financially solvent for best results.

[10] American Dental Association, A Dental Health Program for Elementary and Secondary Schools, 1947, Chicago, Ill.

[11] *Ibid.*, p. 15.

2. *Local funds should be used in support of the program* but where they are not available appeal can be made, usually through state departments of health (but sometimes of education) for the use of state or federal subsidies. Many of the voluntary agencies, such as local tuberculosis groups, frequently have funds available to augment tax funds for such health purposes.

If it is agreed that all children should have the minimum complete dental service, someone must give thought to the specific sources of funds from which the service may be paid for.

3. In view of the fact that the years under ten are the critical ones for dental health, *school programs should be aimed to give as much service as possible in the primary years.* Studies indicate that dental inspections at school which imperfectly locate carious teeth and which are followed by a casual notification of the findings to parents are a waste of money. Children seek and get adequate dental care only when the school examination is well and competently done (by dentists with mirrors and explorers) and accompanied by a complete program of dental treatment and dental education.

4. *The teacher is an important figure in any program of dental health education.* Beginning with case finding, which is the least of the teacher's contributions because she is untrained to note caries or disease, and progressing through the various stages of educational work which can be done with pupils and parents, the teacher can stimulate dental care as perhaps no one else can. She can teach the value of good teeth in many different ways and once the need for dental care is established can work with the individual pupil and his parents until some action is obtained. She can inform the nurse, the dental hygienist, and the dentist of the child's health and economic status.

5. *The dental hygienist is "valuable in demonstrating prophylaxis for younger children,* teaching tooth brushing techniques, making dental inspections, giving talks throughout the schools and aiding teachers in conducting educational and follow-up procedures." In systems where dental hygienists are or may be employed they should work within the plan of a total health education program and not as specialists going from school to school cleaning teeth. Their educational work must be geared to the work under way in the school and have no values separate from the values of the total program. The greatest effectiveness of a dental hygienist will be felt either as a prophylactic attendant at the dental clinic or office or as a teacher

working not sporadically but continuously with the teachers and children in the classroom.

6. *The public health or school nurse has important opportunities in a dental health program.* They include: serving as the go-between in the school-home follow-up relationship; coördinating the educational with the clinical services (so as to avoid inconsistencies and to secure better timing of educational materials); stimulating and helping teachers in the cultivation of their knowledge and interest in dental health problems; making home calls to encourage dental attention where needed; serving as a counselor to students, particularly older ones, about their dental problems; assisting the dentists on their school visitations; securing information about the personal and economic status of families so that dental care may be arranged with greater intelligence.

In many of these functions a well-prepared and well-educated dental hygienist would be equally competent. The two would be interchangeable in effectiveness.

7. *It seems to be an unanswered question whether the original dental examinations should be made in the offices of private dentists or at public clinics or at the school by visiting dentists.* There are advantages to each plan. A visiting dentist can discuss the whole problem with the teacher, finds the child in a familiar atmosphere, and saves time in making large numbers of examinations.

On the other hand, examinations made at offices or clinics usually have the advantage of better equipment, ordinarily require parental attendance, and serve as greater invitations to immediate corrections and to the establishment of a dental regime for the particular child. School authorities should air this problem thoroughly with their health education personnel and with the local dental group before proceeding one way or the other.

8. Agreement now exists among dental personnel to the effect that the administration of *topical fluoride to the teeth of a child and the fluoridation of the water supply of a community* will reduce the size of the dental caries problem. There is no reason at present to believe that either usage will eliminate tooth decay entirely but there is evidence to show that dental caries can be reduced materially in a population if the fluoride treatments are used. It becomes the clear responsibility of the school to inform children and parents of this and to urge the adoption of appropriate measures.

The Council on Dental Health of the American Dental Association recommends that the topical fluoride treatment be applied by the patient's private dentist, if possible, since four applications of the fluoride are necessary for maximum results, spread a week apart. Thus the dentist will have the patient under close observation for a period of at least one month, during which time he may correct a probable excess of carbohydrates in the diet and give instruction as to proper tooth-brushing. It is believed by most pedodontists that the above procedure may establish proper habit patterns in mouth hygiene which will result in greater caries reduction than may be obtained in clinic practice.[12]

Research in this area is productive and persons concerned with school dental programs will find it profitable to keep their information and practice up to date.

Investigations in recent years have established the desirability of adding fluorides to public water supplies where that material exists in the natural state in less than effective quantities. There is ". . . a large mass of evidence which demonstrates conclusively that there is approximately three times as much dental caries in children who use fluoride-free domestic water as there is in children who are born and reared in communities whose communal water contains 1 ppm or more of fluorine."[13] By now "There is little, if any, dispute that children who drink water containing approximately one part per million of fluorine from birth until the age of eight or nine, while the teeth are being formed, as a general rule will have fewer cavities than children drinking water containing no fluorine. The extent of the reduction of dental decay to be expected under such a program can only be approximated at this time, but estimates range from one-third to two-thirds reduction."[14]

Not only have these facts been established but it is also agreed that the addition of fluoride compounds in the above mentioned quantity *presents no hazard to the public health.* There is no evidence to support the antifluoridation view that the addition of fluorides will cause numerous diseases and ailments. Among the highly qualified and reputable professional organizations which have endorsed the fluorida-

[12] Adopted form LeRoy Johnson, D.D.S., Past Chairman, Council on Dental Health, Ohio State Dental Society.

[13] American Dental Association, *Fluoridation in the Prevention of Dental Caries,* 1952.

[14] Delaney Committee of the House of Representatives, "The Congressional Committee Report," *Willing Water,* No. 19 (October, 1952), p. 3.

tion of public drinking water supplies are the American Medical Association, the National Research Council, the American Public Health Association, the American Dental Association, the Association of State and Territorial Health Officers, the United States Public Health Service, and the American School Health Association.

9. A program of instruction relative to dental problems is essential. Such a program should reach all children and their parents. There are two principal problems involved—the prevention of dental caries and the prevention of malocclusion of teeth. Not only are these the two principal problems involved but, at the present, they are both becoming more severe in the population as a whole.

Knowledge of dental caries has developed greatly in recent years. Teachers responsible for the instruction given in schools should be familiar with the essential facts involved:

1. Dental caries is a disease of the calcified tissues of the teeth. It is caused by acids, resulting from the action of micro-organisms on carbohydrates, it is characterized by a decalcification of the inorganic portion; and it is accompanied or followed by a disintegration of the organic substance of the tooth.
2. The growth of bacterial plaque and acid-producing bacteria housed in the plaque, coupled with the presence in the mouth of sweet food or drink, is the mechanism for decay.
3. Dental decay is unrelated to poor nutrition but is caused by sweets in the diet.
4. There are individual variations in natural protection against decay which have not as yet been successfully analyzed.

With these basic facts to build on, the school can construct units of study for every grade which will enlighten the school and community population concerning this serious problem.

SELECTED READINGS

Nutrition

Albritton, E. C., *Standard Values in Nutrition and Metabolism*, Philadelphia, Saunders, 1954.

Goodhart, Robert S., *Nutrition for You*, New York, Dutton, 1958, p. 215.

Hathaway, Milicent L., *et al.*, "School Lunches: Their Nutritive Value and Relation to the Health and Diet of Children," *American Journal of Public Health*, September, 1950.

Hawley, E. E., *Art and Science of Nutrition,* St. Louis, Mosby, 1955.

Joint Committee on Health Problems in Education, *Healthful School Living,* Washington, D.C., National Education Association and the American Medical Association, 1957, chap. 7.

Kilander, Holger F., *Nutrition for Health,* New York, McGraw-Hill, 1951.

Koopman, Robert, "School Lunch Provides Many Teaching Opportunities," *The Nation's Schools,* LIX (1957), 49–53.

Moore, F., and Boyd, F. C., "Curriculum in School Lunch," *Practical Home Economics,* XXXIII (January, 1955), 18–20.

National Association for Mental Health, *Eating Problems of Children,* New York, 1951.

Office of Education, Federal Security Agency, *State Provisions for School Lunch Programs,* Bulletin No. 4, Washington, D.C., U.S. Government Printing Office, 1952, p. 7.

Office of Education, *Planning and Equipping School Lunchrooms,* Bulletin No. 19, Washington, D.C., Superintendent of Documents, 1946.

Richey, Jean A. S., *Teaching Better Nutrition,* New York, Columbia University Press, 1950.

Roberts, L. J., *Nutrition Work with Children,* Chicago, University of Chicago Press, 1954.

Sherman, H. C., and Hanfarce, C. S., *Essentials of Nutrition,* New York, Macmillan, 1951.

Sherman, H. C., *Nutritional Improvement of Life,* New York, Columbia University Press, 1950.

Towntree, J. I., "Getting Children to Eat Right Foods," *Journal of Health, Physical Education and Recreation,* XXIII (May, 1952), 18–19.

Whitehead, F. Eugenia, "Nutrition and the Teen-Ager," *Journal of Health, Physical Education and Recreation* (January, 1955), 7–9, 26.

Dental Health

American Association for the Advancement of Science, 1515 Massachusetts Ave. N.W., Washington 5, D.C.

Moulton, F. R. (ed.), *Fluorine and Dental Health,* No. 19 (1942).

Moulton, F. R. (ed.), *Dental Caries and Fluorine,* 1946.

Shaw, J. H. (ed.), *Fluoridation as a Public Health Measure,* 1954.

American Dental Association, 222 East Superior Street, Chicago 11, Ill.

"Dental Health Highlights," *Monthly Newsletter of Council on Dental Health,* November, December, 1956, January, 1957.

"Fluoridation Facts—Answers to Criticisms of Fluoridation," 1954.

"Fluoridation in the Prevention of Dental Caries," Fourth Edition, May, 1954.

Hillebee, H. E., Schlesinger, E. R., *et al.*, "Newburgh-Kingston Caries-Fluorine Study; Final Report," *Journal of the American Dental Association,* March, 1956.

A Dental Health Program for Schools, the Maintown dental health project, 1951.

Fulton, John T., "Dental Care for Children," *American Journal of Public Health,* April, 1950.

Galagan, Donald J., "Progress in School Dental Programs," *American Journal of Public Health,* July, 1952, p. 834.

Gerlach, Lester A., "Trends in School Dental Health Programs," *Journal of School Health,* XXIII (May, 1953), 159–166.

Gutman, Ross E., "Program of Dental Health Education in New York State Public Schools," *Journal of School Health,* 25 (October, 1955), 229.

Joint Committee on Health Problems in Education, *School Health Services,* Washington, D.C., National Education Association and American Medical Association, 1953, chap. 5.

Kilander, H. F., "National Survey of Dental Aspects of School Health Services," *Journal of American Dental Association,* LI (1955), 159–167.

Menczer, Leonard F., "Toward Achieving an Ideal School Dental Program," *The Journal of the Connecticut State Dental Association,* August, 1954.

Menczer, Leonard, F., "Authorized Absenteeism from School for Routine Private Dental Care," *Public Health Report,* LXIX (1954), 1171–1179.

U.S. Department of Health, Education and Welfare, Public Health Reports, Washington 25, D.C.

Arnold, F. A., Dean, H. T., *et al.*, "Effects of Fluoridated Public Water Supplies on Dental Caries Prevalence—Tenth Year of the Grand Rapids-Muskegon Study," July, 1956.

Hagan, T. L., Pasternack, M., *et al.*, "Waterborne Fluorides and Mortality," May, 1954.

Leone, N. C., Shimkin, M. B., *et al.*, "Medical Aspects of Excessive Fluoride in a Water Supply," October, 1954.

Russell, A. L., and Elvove, E., "Domestic Water and Dental Caries—A Study of the Fluoride-Dental Caries Relationship in an Adult Population," October 26, 1951.

Testimony of the Public Health Service—Department of Health, Education, and Welfare Before the House Committee on Interstate and Foreign Commerce in Connection with Hearings on H. R. 2341, 1954.

Wisant, J. M., D.D.S., Soricelli, David A., D.D.S., "Evaluation of School Dental Health Programs," *Journal of School Health,* XXVIII, No. 10 (December, 1958), 320.

— 14 —

Programs for the Handicapped, and for Vision and Hearing

PROGRAMS FOR THE HANDICAPPED

It is roughly estimated that there are 12 million children in the United States who are handicapped sufficiently to present a special problem in their education.[1] Surveys from time to time indicate that some 2¼ million have impaired hearing, of whom possibly 34,000 are deaf. There are nearly a million crippled children, 20,000 blind and 75,000 with seriously impaired vision, 500,000 tuberculous, and a similar number suspected as being "pretuberculous." Roughly 500,000 suffer from serious heart limitations and 275,000 from epilepsy. Among children handicapped mentally almost any figure not short of 8 or 9 million will be a fair approximation—estimates vary greatly with this group. There may be as many as 3 million with mental and nervous disorders and 7 million who are intellectually subnormal. These gross figures mean that for every school system of 3000 students there will probably be 3 deaf children, 10 with impaired hearing, 2 partially sighted, 15 crippled, 20 with heart impairments, and 4 epileptic.

These unfortunate children, each forced to make adjustments to life in a seeing, hearing, "normal" world require the attention of school personnel in many ways. It is recognized at once that they must be provided for educationally. They are entitled to all that can be given them. They have the right under our conception of democracy in education to seek and gain from every part of the curriculum all that is avail-

[1] Arthur J. Lesser and Eleanor P. Hunt, "The Nation's Handicapped Children," *American Journal of Public Health*, XLIV, No. 2 (February, 1954), 166.

able to them. To facilitate the process of educating the handicapped, schools are evolving a program with the following five features.

Case-Finding

A child is considered handicapped if he cannot within limits play, learn, work, or do the things other children of his age can do; if he is hindered in achieving his full physical, mental, and social potentialities. The initial disability may be very mild and hardly noticeable, but potentially handicapping; or it may seriously involve several areas of function with the probability of lifelong impairment.[2]

It is important that local school authorities develop a system of discovering handicapped children, since only after they are found can education extend its benefits. If the children remain unknown to school authorities, either they are left to grow up "illiterate, ignorant, and unable to take their place in society" or unintended hardship is placed upon them by asking them to adapt to a school program for which they are not fitted. Case-finding procedures have to be taken into the community and into the home—many times with the help of the local census office—to find the handicapped child. Other programs, developed within the school, rely upon various appraisal examinations to reveal those who seriously deviate from the normal. Of course, it is not ordinarily difficult to recognize the deaf child, the one seriously crippled, or the one with defective speech, but it is quite another matter to pick out the tuberculous, the heart deviate, or the epileptic. The screening programs in school have to be carefully effective; they have to utilize as much evidence as they can get by way of medical history and previous records from the family or agency physician. The school must share the evidence with the home; thus it will be able to cooperate with parents and physicians in providing the best educational program possible. In instances of epilepsy, for example, unless the handicapped is recorded on the history the school may know nothing of its existence and the child may be exposed not only to bodily harm in the event that a seizure occurs in the shop or in physical education, but also to great emotional distress if companions and teachers are not forewarned and ready to help and understand. A cumulative record from babyhood to date is an

[2] *Services for Handicapped Children*, prepared and authorized by the Committee on Child Health of the American Public Health Association, New York, 1955, p. 12. Copyrighted by the American Public Health Association.

excellent means of transmitting such information to those who can use it to advantage. The school, therefore, should develop the best case-finding program possible. (See Chap. 10.)

Medical Treatment

Once the case-finding program gets underway, the extent of the problem in the community will become known. From this information, community and school officials can estimate the kind and extent of medical, social, and educational services needed, as well as determine the sort of vocational counseling which should be provided.

It is not, of course, the business of the school to provide medical treatment to handicapped children. It is important, however, that everything done in school be done *in relation to* any hopeful therapy which might alleviate the handicap. The school has several opportunities here. It can, in the first place, serve to bring handicapped children whose disabilities might be wholly or partially alleviated into contact with medical service. Thousands of them, possibly millions, have never had the advantage of a medical examination, diagnosis, or care. It may have been that the child was always thought of as "weak," "spindly," "not bright," or was typed by some other homely characterization when actually there are underlying organic or psychological disturbances which need revelation. They might respond if appropriate therapy were provided. Through its screening and referral service the school should take great pains to see that whatever *can* be done medically *is* done.

School personnel also need to know of the medical problem involved in each case in order to recognize the limitations of the child as well as the possibilities. They will not want to schedule the child for a school experience which will be harmful nor will they expect adherence to any standards when the current therapeutic treatment of the child is interfering. In short, *the medical status of the child takes priority over the educational.* The school is in a position of wanting everything done that can be done medically before it imposes other requirements or opens other opportunities to the child.

The Educational Program

Modern education recognizes individual differences and tries to individualize educational programs as far as possible. The fact of individual differences is strikingly apparent with handicapped children.

It becomes clear to all who deal with them that the more individual attention they receive, the greater educational progress they make. In planning to educate the partially sighted or the emotionally unstable, for example, the teacher, administrator, and nurse must understand as much as they can about *each particular child* and construct the educational program just as the therapeutic program would be prescribed—in relation to the need, capacities, and nature *of that child.*

In larger centers that ideal is difficult to attain. The tendency is to group the children. Once they are grouped as "nutrition disabilities" or "heart" cases, the temptation is to give them all the same program. In physical education, for example, it is not uncommon to see a class of "posture" cases all at work on the same exercises, or a group of heart cases all excused and doing nothing. Such group handling is an antiquated procedure and will not bear the scrutiny of modern scientific thought. If through physical education a contribution can be made toward improving posture or removing the cause of this particular bad posture, then specific exercises must be prepared just as specific surgery is prepared for each case. The former practice of lining all posture deviates up and giving them the same posture exercises is implausible and unrealistic. Physical education must individualize its program even more perhaps than other areas because there is more than a mental problem involved.

Around this question centers a major controversy in the education for the handicapped: Should the handicapped be educated in regular schools along with and in competition with normal children, or should special schools be established for them? There are arguments for and successful demonstrations of both practices. Many specialists in the education of the deaf and blind believe strongly that the state should provide separate facilities where these people can be educated among their own kind and specialize in the development of those talents which are most likely to provide economic and social security for persons so disabled. The many state schools for the blind and deaf and Gallaudet University in Washington, D.C. (for the deaf) represent institutions devoted to this practice.

On the other hand there are those who believe that because the blind must live in a seeing world and the palsied in a world of moving things they should learn as early as possible to adjust to normal people and meet them on their own ground. Their answer is to place the

handicapped child in a regular school, give him the advantage of special techniques (speech-reading, Braille, hydrotherapy), and expect him to measure up as far as he can. The proponents of this plan not only claim a better adjustment on the part of the handicapped but cite the beneficial effect it has on the normal child in getting him accustomed to living with the less fortunate.

The fact is that education can go on successfully under either the mixed or the segregated plan. The determinant as to which is the better place to send a handicapped child is the child himself. Some children thrive in one situation, but wilt in others. The educator and the physician must help the parent choose the environment and the program best suited to the individual.

But in either situation *the educational program emphasizes the possibilities and not the limitations of the child.* This is psychologically of the greatest importance. A cardiac case is helped to find what he can do and little emphasis is put upon what he cannot. The physical education teacher helps the blind to swim. He explores the possibility of bowling, fly-casting, or table tennis with the boy with the rheumatic heart. He assists the amputee to play golf, to fish, or to swim. The emphasis may be negative only in caution against injury; otherwise, it is positive—"this you *can* do." To help the blind to make progress academically; to aid the crippled, the tuberculous, the cardiac to *learn;* to experiment, to interpret, and to understand—these are opportunities which must be extended. The problem is not only a health one but a social one as well.

Educational programs for handicapped children (some prefer to call them exceptional children) will develop only insofar as the community understands and is sympathetic to the problems. A fully developed program requires special facilities and services to provide for physical, speech and occupational therapy, space in the building, special teachers, special scheduling, and special services. All of this requires not only capital outlay but added maintenance and salary provisions. The whole program becomes a cooperative venture between educational and medical personnel, with the medical phases being supervised by medical people and the educational phases being supervised by educators.

Not an inconsiderable feature of this educational program for the special child is the effort to inform the people of the community what

the problem is and how it can be affected. School personnel working cooperatively with medical and social workers can, through various types of community groups, reveal the problem and make suggestions as to the program. Prevention should be emphasized and community groups should have pictured for them the five principal channels for preventive work which are productive:

1. Adequate prenatal care to prevent so far as possible metabolic, immunologic, infectious, or mechanical complications of pregnancy which might endanger the development of the fetus, result in prematurity, or cause a handicapping condition in the newborn.
2. Qualified obstetric care to minimize the chances of accidents like brachial palsy, cerebral hemorrhage, or anoxia at the time of delivery.
3. Active and passive immunization and other protective measures against communicable diseases which may have handicapping after-effects.
4. Health supervision of young children throughout the formative years to prevent the onset of potentially handicapping conditions and to recognize such conditions early.
5. Parent and community education and legislation, to reduce the number of accidents involving children.[3]

Finding Compensations

The handicapped frequently make extraordinary adjustments, physical and psychological, to their handicaps. Many of these adjustments revolve around the development of some compensation or compensatory device. The partially sighted wears heavy glasses and sees as well as the next one. The glasses compensate. The amputee masters the artificial limb and is proud when his gait approaches normal. The cardiac learns that he can play but one set of tennis and is content with being a spectator or official when that is done. The partially deaf wears a hearing aid, the stammerer finds satisfactions not in speech but in writing, the crippled child becomes more keenly aware of the world of nature. There are innumerable compensations which bring satisfactions in lieu of those which would come if the handicap did not exist. The teacher is in a strategic position to aid in the development of these satisfactions.

Next to the actual medical or psychological phases of the handicap, this development of appropriate compensations is perhaps the most

[3] *Ibid.*, pp. 22–23.

important health problem for the handicapped. Children must be guided into them, helped to establish them, and rewarded for success in them.

The Emotional Problem

Closely allied with the factor of compensation is the larger problem of total emotional and psychological adjustment to being different—to being handicapped. Normal people who see, hear, speak, and move around probably cannot appreciate just what it means to be looked at, examined, pitied, given special attention, restricted, handicapped. Nevertheless, the educator must not only teach the skills of learning or of earning a living; he must also exert every effort in helping the handicapped to become a "man among men"—a child accepted and not rejected—a person belonging to a group and not isolated from it. The elementary years are crucial in this regard. Let the palsied, the crippled, the cardiac be left out when sides are chosen, when the plan is outlined or the chorus formed, or when the physical education period comes, and the seeds of maladjustment are sown. The physical education teacher must be particularly alert here. Throughout the school years from kindergarten through college the physical educator must hold available to all—the handicapped as well as the normal—the opportunity *to receive a physical education.* None should be excluded. The program should be flexible enough to embrace *all.* The blind child and the crippled are both entitled to receive that contribution which an intelligent physical educator can make to their psychological adjustment to life.

Investigations of child with reading disabilities reveal that they are frequently isolated, lonely, and sometimes resentful children. They hold themselves in low esteem and sometimes their group adjustment is virtually nonexistent. Although children with crippling conditions may be expected to have the same kinds of behavior and emotional patterns as their normal contemporaries, the burden of a handicap may add difficulties to the process of growing up. For some children the emotional and intellectual aspects of their special problem may be the most important. For each disabled child an attempt should be made to: (1) understand how the awareness of his handicap affects his personality and behavior; (2) know the approximate level and quality of his mental capacity and liabilities, and the areas of strength and weakness in his

personality; (3) estimate his ability to cooperate and profit from therapy and education; (4) learn the best ways of giving appropriate guidance to those who live, work, and play with him and who are responsible for his care and training; (5) determine whether or not brain damage is a factor underlying his behavior.[4]

It must be realized that each child is different—different in personality, in ability, in aspiration. To aid each in identifying himself with the group, in compensating for the handicap which makes him different, in becoming poised and self-reliant—these are the aims of any educational program for the handicapped.

Special Provisions

The federal government and most states have subsidized special education for the handicapped. Funds are usually administered through state departments of public instruction, and teachers should acquaint themselves with such resources as might be used locally to aid in the education of the handicapped. Sometimes special tutors are provided for bedridden children; sometimes medical aid is subsidized, special gear provided: books in Braille, hearing aids, typewriters for the palsied, rest room equipment for the cardiac or malnourished. These are some of the many aids supplied by state, federal, and local organizations. No handicapped child need go unattended or unaided.

VISION

Perhaps no function of human life has to make quite such a sharp adjustment to the unnaturalness of schooling than does vision. The human eye is, fortunately, made of flexible and durable stuff. It seems able to weather surprisingly well the abuse it receives from inadequate school lighting systems and the demands for close work which are put upon young children. Certainly there is no reason to believe that the human eye, particularly the eye of a child, takes natively and easily to the environment and demands of a school.

On the other hand, current evidence indicates that vision can be improved. Popular belief may have it that one sees as much as one can see, but that may not be so. There is much reason to believe that through a program of training not only the peripheral vision but also

[4] *Ibid.*, p. 29.

perceptual acuity can be improved. All is not yet known about the possibilities of protecting vision from the abuses which schoolwork inflicts and of actually improving vision beyond what seems to be the "natural" state. These methods for improving seeing will be brought into the classroom eventually and will become a part of everyday usage. At the moment they remain in the experimental stage.

The Problem

About one out of every four school age children present eye problems of some kind or other making referral for compensatory or therapeutic care desirable.[5] In the population at large an estimated 70 million have eye defects, of which 9 million of these are children in need of eye care. Errors of refraction (nearsightedness, farsightedness, astigmatism) are the most common disorders. Perhaps one-half of the cases discoverable in any given school situation will represent refractive problems. The others will involve developmental abnormalities of structure (cataracts, albinism), 18 percent will have defects of muscle function (strabismus), and another 11 percent will have diseases of the eye. *Not all of these situations are remediable by the prescription of glasses.* This is an important fact to remember when undertaking an educational program with parents and children.

The school's interest in vision is twofold: not only is there concern about any present inability to do school work because of handicapping vision, but also about the future potential for eye difficulty. For example, it is roughly estimated that one million persons have glaucoma and may lose their sight if not treated. The school must inform its people of this possibility. The development of cataracts, diabetic retinopathy, hypertension, detached retina, injuries, and uveitis are some of the possibilities attendant upon advancing years; to fail to educate high school and college youth regarding these would be a serious omission. The population should know what the ophthalmologist and others in medicine have done and can do in treatment of eye disturbances. To date such diseases as trachoma, optic neuritis, and gonorrhea ophthalmia have virtually disappeared, and others will follow as time goes on.

[5] *Services for Children with Vision and Eye Problems,* prepared jointly by the Committee on Child Health of the American Public Health Association and the National Society for the Prevention of Blindness, 1956, p. 15. Copyrighted by the American Public Health Association.

Classifications

In 1956, the American Public Health Association and the National Society for the Prevention of Blindness described three rough classifications of children with vision handicaps:

1. *Sighted children with eye problems* have eye abnormalities or defects of vision which may be helped by medical treatment, may be corrected or compensated for by optical aids, or may not be severe enough to be seriously handicapping. For classification purposes, these children have a visual acuity of more than 20/70 in the better eye after treatment and correction. A high percentage of individuals in this group have errors of refraction (myopia, hyperopia, astigmatism) or eye muscle imbalance (strabismus, heterophoria). Some have abnormalities such as inadequate color vision. Others have cataracts or ptosis, have lost one eye, or have some purely cosmetic defect of the eye. Most of the children in this group will need medical services and guidance and some may need minor or temporary adjustments in their educational program.

2. *Partially seeing children* have such marked visual difficulties that even after all medical and optical help has been provided they are still unable to profit from many of the educational opportunities and experiences provided for children with normal vision. For classification purposes, these children have a visual acuity of 20/70 or less in the better eye after the best correction possible and yet they have sufficient residual sight so that they may use it as their chief channel of learning. Children are also included in this group who in the opinion of the eye specialist can benefit from either temporary or long-term use of special medical and educational services. They may have a progressive eye difficulty (retinitis pigmentosa); have had an accident or an operation (removal of an eye, surgical correction of crossed eyes) which necessitates readaptation or reeducation in the use of the eyes. Or they may have an eye problem which has been intensified by some superimposed condition (accident, infection).

3. *Blind children,* despite medical care and the best corrective measures, have such limited vision that they cannot use it as their chief channel of learning. The legal definition of blindness is a visual acuity of 20/200 or less in the better eye after correction or a visual field restricted to less than 20 degrees in the widest diameter.[6]

Optimum Conditions

The school should do all it can to facilitate seeing. From the first grade on, teachers require children to read and otherwise work with

[6] *Ibid.*, p. 13.

their eyes, which may be damaged in the process. The school organization surely can do no less than to give every protection to vision by providing desirable conditions in every classroom and laboratory. The following optimum conditions should be secured:

1. A foot-candle intensity of thirty should prevail in every classroom and laboratory. The foot-candle can be read with an ordinary photographic light meter and readings should be taken in all parts of the room. Table 8 shows recommended lighting levels for various school rooms.

TABLE 8. Recommended Lighting Levels in Schools

Locations	Minimum Foot Candles
Classrooms—on desks and chalkboards	30
Study halls, lecture rooms, art rooms, offices, libraries, shops, and laboratories	30
Classrooms for partially seeing pupils and those requiring lip reading—desks and chalkboards	50
Drafting rooms, typing and sewing rooms	50
Reception rooms, gymnasiums, and swimming rooms	20
Auditoriums (not for study), cafeterias, locker rooms, washrooms, corridors containing lockers, stairways	10
Open corridors and storerooms	5

SOURCE: Illuminating Engineering Society and American Institute of Architects, *American Standard Practice for School Lighting*, New York, 1948, p. 79.

2. Daylight is better for eyes than artificial light so shades should be drawn as little as possible (only enough to eliminate glare).
3. Sunlight fades in the afternoon with surprising rapidity; thus, the farther north the school is located, the earlier the lights should be turned on.
4. Daylight illumination is greatly increased with high windows. Teachers should let the shades all the way up. If janitors can arrange to put shades at the bottom of the window (to avoid glare), then light can be admitted at the top where it can be diffused and deflected over the room.
5. As much glass area as is structurally possible should be placed in walls.

6. Children with vision handicaps should be seated in the room in locations most advantageous to the work they are expected to do.
7. Comfortable seeing is the desired end of classroom lighting. This means the removal of all sources of glare, ample wattage, pastel walls, white ceilings, and an even distribution of light over the room.

If these conditions can prevail in all classrooms and laboratories, the school will have gone far toward meeting its obligation to provide a school environment conducive to good vision.

Discovery and Appraisal

There is not a classroom teacher who does not have one or more children in the room in need of some attention, some help, with their vision. It is the teacher who is in the strategic spot to locate these deviations from normal. She sees the pupils in relation to others and can judge them comparatively on the basis of performance and behavior. Thus, the teacher can make observations and tests upon vision and, when a handicap is found, be instrumental in starting corrective procedures.

Whether in elementary or secondary school, the teacher should be on the alert to notice and report such behaviors as blinking, spasmodic irritability, holding of reading material close to or far away from the eyes, rubbing the eyes, experimenting with seeing by closing one eye, tilting the head, rubbing the eyes as if to wipe away a blur, inattention during reading period or while looking at the board, disinterestedness in reading or reading when something else should be done. When children are observed to be holding books extraordinarily close to their faces for reading one may suspect that they are nearsighted (myopic). If they hold things well at a distance they may be farsighted (hyperopic).

Astigmatism is a common distortion of the lens of the eye so that vision at any distance is blurred. Astigmatic children often have headaches from reading. It is not implausible to believe that a good number of other more serious disorders of childhood (nausea, emotional unbalance, heart irregularities) may be traced to astigmatism.

It would be ideal if the teacher, noticing such behaviors, could then test vision in the class and screen out every child who had a suspicion of eye disease or a vision handicap. It would also be ideal if parents and physicians who know of vision defects of children would tell the teachers about them so appropriate school adjustments could be made.

Teachers do not always know which of their children have vision handicaps. Thus it is difficult for the teacher to make the appropriate adjustments for the child within the classroom, to teach the child anything about sight conservation or medical attention, and to understand behavior problems in relation to vision.

Improvement of the latter situation can only come about when parents and physicians are willing to tell school personnel more about the children they teach, to share information about development to the ultimate good of the child himself. Schools should actively seek such information on vision by requesting parents or physicians to indicate the cases and the nature of their handicap along with whatever recommendations they would care to make regarding the learning process.

But the principal gain from the school's standpoint will come when teachers can develop such skill at observing signs and testing vision that they can approximate complete accuracy in screening out those who need medical attention and corrective treatment (including glasses). Teachers must realize at the outset that not every case of defective vision needs glasses. Such a popular notion must be dispelled. The teacher's object should be only to screen, letting the correction of the abnormality, if any, remain a matter of medical judgment. The teacher need never say, as a result of a discovery of a 20/60 vision, "You should have glasses." The child and parents need be told only the fact—that on this screen 20/60 vision was found, the child is having difficulty doing certain things in school, and medical attention is definitely in order.

It is important that teachers develop a high competency at screening for vision, particularly in those schools where no specialist is available to do the screening. Where such specialists are employed they should be given ample time to do a thorough screening job. But teachers, particularly elementary school teachers, are the central figures in screening for vision and that is the reason they should develop competency in using one or more of the tests currently used for this purpose. The American Public Health Association and the National Society for the Prevention of Blindness have this to say about these tests:

The Snellen Test is the most practical test for evaluating distance central visual acuity. It is inexpensive, easy to administer, and takes on the average

only about one minute per child. Like other screening tests, it is not intended for use in diagnosing the nature of the eye defect, but it will show differences in visual acuity between the two eyes (often related to muscle imbalance) and gross visual inadequacy in both eyes. The Snellen Test is the test most commonly used for preschool and school children, particularly those under 8 or 9 years of age.

The Snellen Test consists of identifying standard test objects (usually letters or the E symbol on a chart) from a distance of 20 feet. The test objects are of graduated sizes and are constructed according to scientific optical principles. Each size is numbered to indicate the standard distance at which a person with normal visual acuity should be able to identify it. One is said to have "normal" central visual acuity for distance if he can see the 20-foot size from a distance of 20 feet.

Several other types of vision screening tests are also used. Some consist of a battery of tests and subtests designed to measure different visual functions (acuity, lateral and vertical muscle imbalance, hyperopia, and fusion). These tests require special equipment, trained technicians or nurses, and a corresponding increase in the length of time necessary to administer them. Among these tests are the Massachusetts Vision Test and those employing mechanical devices such as the Telebinocular, Ortho-Rater, and Sight-Screener Tests. Other screening tests directed toward measuring special visual functions are also used (Jaeger near-vision test cards, pseudoisochromatic charts, or colored wool tests). Standard pseudoisochromatic color plates of the Ishihara type are entirely practical for the color-vision screening of elementary school children at any grade level. The test takes roughly 3 minutes per child.[7]

The Snellen Test

If the Snellen Test is used, Wheatley and Hallock[8] recommend the following procedures:

Place the eye-test chart on the wall. The intensity of illumination on the chart should be equal to ten foot-candles evenly diffused without glare. The illumination of the surrounding areas should be as nearly equal as possible to the light on the chart and never less than one-fifth as much. Too much light on the chart, or spot lighting of the chart, may compensate for some errors of refraction and keep them from being discovered. To avoid contrasts, no bright light should be within the child's field of vision. With day-

[7] Services for Children with Vision and Eye Problems, *op. cit.*, pp. 30–32.

[8] George S. Wheatley and Grace T. Hallock, *Health Observation of School Children*, Second Edition, New York, McGraw-Hill, 1956, p. 372.

light illumination the chart should be hung opposite a window and the child placed with his back to the window.

Using a tape measure or yardstick, measure a distance of twenty feet from the wall on which the chart is placed, and mark the twenty-foot line on the floor with chalk or adhesive tape. Have each child being tested stand with his heels on the twenty-foot line exactly in front of the chart or sit in a chair placed on the line. The eyes should be at about the level of the twenty-foot row of letters or symbols. The chart may be raised or lowered with the varying heights of the children.

Test each eye separately. While one eye is being tested have the child or a helper hold a card or a folded clean sheet of paper (about 2½ by 3 inches when folded) over the eye that is not being tested. Each child should have his own card or paper to avoid the spreading of infection. Show the children how the eye cover should be held. It should be grasped at the edge and placed so that it rests obliquely across the nose. It should not be pressed against the eyeball. Tell the children to keep both eyes open during the test. When the cover is lifted, note whether the eye that has been hidden makes an abrupt movement in order to focus. If so, mention the fact in recording the results of the test.

Test the right eye first, then the left eye, then both eyes together. If the child wears glasses, have him take the test first with his glasses, and then without. This gives the child a chance to do his best on the first test. Have the child start at the top of the chart and read downward.[9] The number of the lowest line of letters on the Snellen letter chart which the child can read without difficulty will be the denominator of the fraction recording the acuity of vision for that eye.

If the symbol E chart is used, expose one vertical and one horizontal symbol on a line and move down to the next. In the lowest line read correctly, or in the twenty-foot line, expose all four symbols, one at a time. Reading three out of four symbols correctly is considered to be satisfactory evidence that the child can see the symbols on that line.

Observe the child carefully while he is taking the test. If he shows signs of straining to see, do not allow him to continue. Record the lowest line correctly read with each eye and any evidences of straining to see. Signs to look for include thrusting the head forward or tilting it to one side, watering of the eyes, scowling or squinting, and rapid blinking of the eyes.

Record results of the test for each eye immediately in the form of a fraction such as, for example, "R. 20/20, L. 20/40." These figures should not

[9] As young children find it hard to concentrate for long periods, the upper part of the chart may be covered down to the 50-foot line unless there is other evidence of an eye difficulty.

be interpreted as representing a fraction of normal vision. They are simply a record of acuteness of vision at a given distance (20 feet). Vision of 20/40 in the left eye, for example, is not one-half of normal vision, but is merely a manner of recording the fact that the best the child can do is to see with his left eye at twenty feet letters or symbols that normally he should be able to see at 40 feet.

Also record all other findings, including any signs of eye fatigue or straining to see. For children wearing glasses, record the vision for each eye with and without glasses.[10]

The limitations of the Snellen screen should be well known to all teachers. It is in no sense an eye examination but it is reported to be a reliable screening procedure "when carried out carefully and with proper illumination."[11] It does not test the coordination of both eyes working together nor does it test for astigmatism. It may not screen all children with serious defects and, of course, it does not catch color blindness. Nevertheless, and within those limitations, it is a useful screen for teachers and will discover with sufficient accuracy the children who deviate from normal in their vision as to make its use worthwhile.

NOTE: Teachers, nurses, and technicians wishing to consult current literature for best experience in procedures or results of vision screening programs should avail themselves of one or more of the following standard and authoritative sources:

1. The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *School Health Services,* Washington, D.C., National Education Association, 1953, chapt. 3.
2. The Committee on Child Health of the American Public Health Association and the National Society for the Prevention of Blindness, *Services for Children with Vision and Eye Problems,* 1956.
3. George S. Wheatley and Grace T. Hallock, *Health Observation of School Children,* New York, McGraw-Hill, 1955.

Referrals and Program

As a result of the use of either screen the teacher should record the vision of all children, make such adjustments within the room in light and seating as will assist children to see better, report all vision over 20/40 to the office and thence to the home, and cooperate in a program of referral whereby children in need of care may be sent on to an appropriate specialist.

[10] Wheatley and Hallock, *op. cit.,* p. 372.

[11] Thomas E. Shaffer, "A Study of Vision Testing Procedures," *American Journal of Public Health,* August, 1948, p. 1141.

When this four-step program is completed both teachers and parents will know of the vision conditions of the children and will be in a position to take appropriate steps. The accompanying report sheet will facilitate this process.

CONNECTICUT STATE DEPARTMENT OF EDUCATION

CONNECTICUT STATE DEPARTMENT OF HEALTH

HARTFORD

Eye Sight Test
Form #1

REFERRAL FOR EYE EXAMINATION

Child (Name) (Age) (Grade)

Parents (Name) (Address)

	Without glasses	With glasses
Result of screening of vision:	R. E. . .	R. E.
	L. E. . . .	L. E.

Date of test: Test used:

Other symptoms (write in):

Nurse (Name)

School or agency (Name) (Address)

REPORT OF EYE EXAMINATION

(Examiner please complete and hand entire sheet to parent to return to nurse, or mail directly to nurse.)

The following is my report on the above child:

Vision:	Without correction	With correction
	R. E.	R. E.
	L. E.	L. E.

Glasses needed: No . Yes . . constantly . . .

close work only . . . distance only

Other recommendations: (examples: special seating, sight-saving textbooks, etc.: whether child should return for professional care and how soon)

.

.

Date of this examination: Examiner:
(signature and degree)

Address:

In some schools the teachers do not screen for vision; nurses or other technicians do it. Some schools contract with local physicians (oculists-ophthalmologists) or optometrists to conduct the vision testing program from first detection to personal treatment where indicated. In all instances it must be constantly borne in mind that many things can go wrong with the human eye; merely to refract vision and prescribe correcting glasses may be only a small part of the treatment needed (or perhaps not needed at all). The objectives of a school vision program should be constantly in mind:

To confirm or rule out an eye defect and establish the diagnosis of abnormalities found

To determine the extent of involvement and the probable degree of disability

To assess the effect of the specific disability on the physical and personality development of the child and on the attitudes and feelings of his parents

To suggest a prognosis based on the severity and stage of disability, the child's capabilities and potentialities, and the quality and availability of resources to help him

To estimate the child's present and future special needs and those of his family

To recommend treatment and the type and frequency of follow-up care he should receive[12]

Partially Sighted and Blind Children

All teachers should be on the alert to help the occasional partially sighted or blind child succeed in his education. If they attend regular schools, such children should be given every assistance in their academic work and, perhaps of even greater importance, should be assured a

[12] Services for Children with Vision and Eye Problems, *op. cit.*, pp. 39–40.

life of activity within the school geared to their possibilities and *not* emphasizing their limitations. Glee clubs, student organizations, and physical education are important avenues for their development. No physical education teacher should ever shun the opportunity to construct a program, individually if necessary, for partially sighted or blind students. They are entitled to it and will benefit from it as well as anyone else. The general health of these students, particularly their emotional and psychological welfare, will be best served if they are taught to live as near a seeing life as possible.

HEARING

In some ways loss of hearing is not as handicapping to personal development as impaired sight or blindness, and yet the hard-of-hearing or deaf lose so much under ordinary conditions that to help them compensate for their handicap is an important health and educational enterprise. There are psychological problems associated with deafness or partial hearing that are very serious. The deaf person may feel left out or that he is being talked about, or he may develop delusions of one kind or another as a result of building up a suspicion of what others are saying. Loss of hearing may retard normal speech and language development. When a child is deprived of hearing, his social growth and education may be seriously impeded. Failure to learn to use language may cause others to believe the child to be mentally retarded. Emotional immaturity is not an uncommon characteristic. Whatever the situation, the child with impaired hearing needs to be found and given every assistance.

Ideally, the most advantageous time to find children with impaired hearing is in the preschool years. Witmer and Kotinsky make this point regarding the child from 2 to 6:

> The child from two to six is at his peak as a language-learning, developing, behaving personality. Whatever interferes with the normalcy of activities in this age range takes its greatest toll in the personality development of the child.
>
> There is no longer any need for a child to arrive at the age of five or six with a hearing impairment that is undiagnosed, unmeasured, untreated, and uncompensated for by early guidance and training. Once the diagnostic picture has been clarified, in both physical and developmental terms, and

appropriate medical treatment carried out, parents should be helped to work out a program designed to stimulate language and behavioral development. The key to audiologic work with preschool children (the age of eighteen to twenty-four months is the time to begin) is parental insight and understanding.[13]

The use of a pure-tone audiometer and the individual sweep check test can provide the first screenings; these may be followed by further examinations at a hearing clinic or by a private physician.

Classifications

The Committee on Child Health of the American Public Health Association classifies impaired hearing in terms of everyday ability to hear speech as follows:

1. *Mild impairment* means difficulty in hearing speech under less than ideal acoustic conditions.
2. *Moderate impairment* means trouble hearing speech under most conditions.
3. *Severe impairment* means inability to hear speech unless amplified in some manner.
4. *Profound impairment* means inability to hear and appreciate speech by ear alone, even with amplification of sound.
5. *Deafness* is a profound impairment in both ears which precludes any useful hearing.[14]

The Committee further describes the two principal types of hearing impairments as:

1. *Conductive impairment* is caused by obstruction of the passage of sound from the outer to the inner ear. It affects loudness of sounds primarily. Many of the mild and moderate impairments are caused by conductive lesions. These lesions are often preventable, and a considerable number respond well to medical treatment when discovered early.
2. *Perceptive impairment* is caused by degeneration, damage, or lack of development of the sensory cells of the internal ear, the acoustic branch of the eighth cranial nerve, or certain parts of the brain. It affects tonal

[13] Helen L. Witmer and Ruth Kotinsky (eds.), *Personality in the Making*, New York, Harper, 1952, p. 78.

[14] Committee on Child Health of the American Public Health Association, *Services for Children with Hearing Impairment*, New York, 1956, p. 13. Copyrighted by the American Public Health Association.

clarity and sound discrimination (as well as loudness in certain cases). It is usually the perception of high tones which is most affected, but when the loss is severe both high and low tones are involved and understanding as well as hearing is impaired. Medical treatment can as yet do little or nothing for perceptive impairment once it has become established. Prevention is therefore of prime importance.[15]

Discovery and Appraisal

As with vision problems, case-finding is the first step in the development of a program to aid those with impaired hearing. Case-finding begins with the observations of parents and teachers, and aims not only at the location of children with impaired hearing, but its techniques are also directed toward locating children who have potential ear trouble or those for whom hearing difficulty may be presented.

A child with impaired hearing will show many signs: being inattentive in class, being more aware of movement than sound, asking for a repetition of questions, frowning or straining to hear, losing much of a class discussion, articulating poorly or inaccurately, having frequent ear discharges and headaches, developing an unusual voice quality.

Routinely, children showing such signs, as well as all others, should be tested at least once a year. For school screening purposes it is agreed that there is no adequate substitute for the use of the audiometer. Watch and whisper tests have been discarded.

Experience has shown that the pure-tone audiometer, applied individually as a sweep check is the most efficient technique for finding impaired hearing. It is superior to the group phonograph test or the group pure-tone test. The University of Denver Hearing Center, as reported by Marion P. Downs, the supervisor, describes five screening procedures:

1. *The Individual Pure-Tone Sweep Test.* This test employs an audiometer with air conduction ear phones, with which one individual is given a sweep check at a minimum of four frequencies. . . . An average of 30 individuals per hour can be screened this way. . . . This continues to be the chosen technique in many situations, and presents the greatest reliability in case finding. Although in many instances more elaborate equipment may be desirable, a pure-tone audiometer will fill the needs of both the screening program and the follow-up threshold tests. The individual sweep test is inefficient in point of time involved, and may

[15] *Ibid.*, p. 15.

not be economical in a very large school system unless sufficient personnel can be provided to conduct the tests.

2. *The Glorig Automatic Group Screening Audiometer.* Adopted for use in the Armed Services, this device automatically screens up to 40 individuals in 3 minutes by means of a pulse-count technique. The instrument presents a varied number of pulse tones at each frequency, first to one ear and then to the other. . . . For a large population, this automatic audiometer offers the most efficient group screening technique available. In actual tests it has both screened and re-checked 100 children in one hour. No trained personnel are required, as the test administers itself. In its present form, it is effective down to the third grade level, but adaptations to the lower grades remain to be explored.
3. *The Massachusetts Group Screening Test.* Dr. P. W. Johnston of Massachusetts devised this method of group screening, utilizing the banks of headphones from the old Western Electric 4C Audiometers, in conjunction with a pure-tone audiometer. Any other adequate banks of headphones can also be used, connected to the pure-tone instrument. . . . For large school systems it offers an extremely fast and sufficiently reliable technique for grades down to the third.
4. *The Reger-Newby Group Screening Audiometer.* This method employs an automatic audiometer which produces spurts of tone in varying numbers at each frequency. The spurts are counted and recorded by the testees on a form. A flashing light on the instrument mobilizes the attention of the group at the time the pulse tones are to come through. No trained operator is necessary, as once the starting point has been dialed, the instrument goes through the programming automatically.
5. *The Familiar Sound Test.* Developed for children under 6, this method uses a series of familiar sounds such as an automobile horn, a dog's bark, a telephone bell, and a bird song. These are recorded and a page of pictures representing the origins of the sounds is put before the child. He is then asked to identify the origin when he hears the sound. The Familiar Sound Test has proven superior to any of the others for preschool children.[16]

The Use of Audiometry

A helpful description of audiometry and its uses has been given by Hardy and Paul:

Audiometry is the most accurate means for measuring hearing. It includes tests that measure the hearing of pure tones and of speech.

[16] Marion P. Downs, "The Familiar Sound Test and Other Techniques for Screening Hearing," *Journal of School Health*, XXVI, No. 3 (March, 1956), 77.

In pure-tone tests, a series of tones (usually 9 or 10, across a range of six or seven octaves) are sounded in order to determine the child's threshold of hearing (the point of least loudness at which he consistently hears each tone). . . .

There are two significant aspects of speech-hearing testing: (1) The measurement of threshold, by definition the loudness level at which the child distinguishes 50 per cent of what is said to him; (2) the measurement of his ability to discriminate fine differences among speech sounds under conditions of ideal loudness. Both of these tests can be done fairly well with the use of the microphonic circuit that is included in many commercial audiometers; for precise results, special equipment should be used in a soundproofed room.

Pure-tone audiometry tells us what the child *cannot* hear—that is, he cannot hear the test tones at a loudness level that is lower than his threshold. But speech-hearing audiometry tells us how well he uses his hearing in active communication. This knowledge is essential if we are to recognize the child's language shortcomings and to know what we can do to help him to overcome them. . . .

Hearing impairments take several forms, and each has several degrees of severity. When the middle ear is damaged, conduction of sound may be blocked, and thus conversation and noise are reduced in loudness before they reach the inner ear. When the inner ear—the perceptive mechanism—is damaged, sounds are not only diminished but distorted.

Ordinary speech sounds have a tonal range[17] from approximately middle C to the C that is four octaves above; if a child is to hear speech well, he must be able to hear sounds over this range. If the child's hearing nerve is impaired he may hear the lower tones fairly well without being able to distinguish clearly sounds of ordinary speech in the middle and upper tones. He hears distorted sounds, and the result is conversational confusion. The problem then is not merely hearing versus deafness. It is necessary to find out accurately how much difficulty the child's loss of hearing is causing him in communicating with other people.

Thorough audiometric screening will reveal many youngsters with mild to moderate hearing loss that is related to acute or chronic upper-respiratory conditions. These infections can usually be treated successfully, and the child's hearing is usually improved considerably, or even restored to normal. . . .

It is often impossible, however, to improve a child's hearing in such cases unless his impairment is diagnosed and treated early. Therefore, early discovery and treatment of such children should constitute a major part of

[17] This refers to the range of frequencies considered important in understanding speech.

audiology in schools. These children need not only prompt medical attention, but also careful supervision by both teacher and parents while the medical treatment is being carried out. The teacher may need to change the child's classroom seat so as to enable him to work to the best advantage. She should take care that he follows group discussions and should keep a watchful eye on his progress. Giving the child some training in speech reading (a more accurate term than lip reading) is often advisable as a precautionary measure.[18]

In schools where a trained operator of an audiometer is not available, teachers and nurses can take over and, with adequate preparation, screen competently.[19]

Referrals and Program

To be complete, the program for conserving hearing must include a carefully operated program of referral and action. Children suspected or known to have hearing problems should have prompt and effective attention. Referral begins, of course, with parents, and someone from the school, preferably the one who has done the screening, or who knows how to interpret the findings, should report the situation personally to them. Written notification is less desirable even though it may be necessary in large cities. At just what point of variation is hearing considered impaired and thus the child referred? Judgment varies here. The Denver schools notify parents of all children who deviate 15 or more decibels in 2 or more adjacent frequencies on the individual pure-tone audiometer.

Parents should be encouraged to have the child examined and treated, if necessary, by an otologist—a specialist in problems of the ear and hearing. This medically prepared person will be in a position, as no others are, to bring the best of scientific treatment to bear upon the

[18] William G. Hardy and Miriam D. Pauls, "So That Children May Hear Better," *The Child*, August-September, 1950, p. 18. Reprinted by permission of the Department of Health, Education, and Welfare, Social Security Administration, Children's Bureau.

[19] For more complete details on the actual operation of audiometers, teachers should consult any one of the authoritative references on the subject such as: The Committee on Child Health of the American Public Health Association. *Services for Children with Hearing Impairment*, New York, 1956; The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *School Health Services*, Washington, D.C., The National Education Association, 1953, chap. 4; Wheatley and Hallock, *op. cit.*, p. 385.

case. Impaired hearing and deafness are not nearly as discouraging a handicap as they once were. Of late new drugs have been developed for treating infections and allergies which may impair hearing. Better surgical techniques are available, if surgery is recommended, and better instruments for diagnosis are available. Electronic devices for hearing aids are improved and educational programs including lip reading techniques have been improved.

The school program for both prevention and care of hearing problems would not be complete without the following:

1. A program to provide detection and referral promptly of all acute and chronic infections of the ear and any ear, nose, or throat conditions which would lead to middle ear infection
2. A screening program as described
3. Acoustically treated classroom ceilings
4. Safety measures in sports and elsewhere to protect the head from severe blows
5. Precautions, in swimming, against middle ear infection
6. A case-finding and immunization program to protect children against any infectious diseases which might damage the ears
7. A thorough rehabilitation and educational program for those with impaired hearing
8. For seriously impaired children, or the deaf, consideration must be given to the establishment of special classes where special educational techniques are employed

Loss of hearing, thus, is not to be taken lightly or with an attitude of futility. Because hearing is so central to behavior and personality, its care is of great significance. Screening, case-finding, referral, diagnosis, and both medical and educational rehabilitation are essential elements in this aspect of a school health education program.

SELECTED READINGS

In addition to the principal references mentioned in the chapter and the footnotes the following will be helpful:

THE HANDICAPPED

Cruickshank, W. M., "New Horizons in Education of the Handicapped Child," *American Journal of Public Health*, XLV (March, 1955), 306–311.

Daniels, Arthur S., *Adapted Physical Education,* Revised Edition, New York, Harper, in press.

Hamilton, Kenneth W., *Counseling the Handicapped in Rehabilitation Processes,* New York, Ronald Press, 1950.

Wallace, Helen M., Siffert, Robert F., Yu, Horace, Losty, Margaret, and Gossett, Helen M., "Use of a Review Committee in the Evaluation of a Program for Handicapped Children," *American Journal of Public Health,* XLV (1955), 751–758.

Vision

Blum, Henrik L., Peters, Henry B., and Bettman, Jerome, *Vision Screening for Elementary Schools,* The Orinda Study, Berkeley, Calif., University of California Press, 1959.

Crane, Marian M., Scobee, Richard G., Foote, Franklin M., and Green, Earl L., "Study of Procedures Used for Screening Elementary School Children for Visual Defects," *American Journal of Public Health,* November, 1952, p. 1430.

National Education Association, Research Division, *Teaching About Light and Sight* Washington, D.C., 1946.

National Society for the Prevention of Blindness, *An Eye Health Program for Schools,* Latest Edition, New York.

National Society for the Prevention of Blindness, *"Screening," Eye Examinations and Follow Up,* Latest Edition, New York.

National Society for the Prevention of Blindness, *The Snellen Eye Chart,* New York.

Massachusetts Department of Public Health, *The Massachusetts Vision Test,* Auburn, N.Y., Welch-Allyn Co.

Pollack, Philip, *The Truth About Eye Exercises,* Philadelphia, Chilton, 1956.

Hearing

California Department of Education, *Education of the Aurally Handicapped,* Sacramento, Calif., 1953.

Hardy, William G., and Pauls, Miriam D., "So That Children May Hear Better," *The Child,* August–September, 1950, pp. 18–22.

Hayman, Charles R., Rich, Benjamin S., and Stark, Eleanor, "A Conservation of Hearing Program for School Children," *American Journal of Public Health,* December, 1951, p. 1509.

Houchin, Thomas, and Rotter, George E. (ed.), *Special Education: Children with Speech and Hearing Problems,* Nebraska Schools, Division of Supervision and Curriculum, Lincoln, Nebr., Department of Public Instruction, 1952.

Roach, Robert E., "Considerations in Education of Children with Various Degrees of Hearing Loss," *Exceptional Children*, XX (May, 1954), 330–335, 358–359.

Streng, Alice, *et al.*, *Hearing Therapy for Children*, Second Revised Edition, New York, Grune and Stratton, 1958.

— 15 —

The School Day

The health of children is affected by the experience of going to school. Compulsory education laws usually require attendance beginning at the impressionable age of 6. Thereafter about one-third of the child's waking hours will be spent in the somewhat unnatural environment of a school. In some respects the process of getting an education, at least in the pattern which is currently used, is quite different from the pattern of living which the child would follow if he did not have to go to school. The principal differences are in the amount of vigorous activity performed and in the intensification of personal and social relationships.

Each of these factors has health implications. Man was designed to be an active being. His growth and development depend in large measure upon activity. To become active and to remain active answers in some measure the contribution of man's capacity for movement to his expanding awareness of himself and his world. Physiologically the use of the muscular system is essential to the development of all other vital functions because of their interrelatedness.

Hence "going to school," assuming that the school experience is more sedentary than active, becomes in some measure a hazardous experience. The danger is to be found not only in the generally sedentary character of the school day, but in the conditions under which the child must live. Factors of fire, sanitation, exposure to disease, accident, lighting and ventilation, food preparation, and the necessity of constantly being associated with and in a group—all of these bear inescapably upon the health and personality of any child at any age. To assess this influence with any reasonableness is not possible at this time, but it

must be considerable. These relationships are real, not imaginary, and any consideration of the health program of a school must take them into account. It is axiomatic that if the school *requires* attendance it must mobilize *all* the influences within it to contribute to the health and welfare of its pupils—and none should detract therefrom. This point of view is basic.

IMPORTANT CONSIDERATIONS IN EFFECT OF SCHOOL ON HEALTH

There are five principal areas of school life and administration which need careful appraisal from the standpoint of their bearing upon health: the physical environment, the health implications of the curriculum, teaching practices, the school atmosphere, and the health and emergency protection established by the school.

Environmental Considerations

It was clear to those attending the fourth National Conference for Physicians and Schools that "the physical aspects of the school environment should have priority in developing a school health program. . . . Provision should be made for a safe water supply and sanitary disposal of waste . . . adequate heating, ventilation and lighting . . . safety of the building and grounds, and transportation. . . ."

These are elemental considerations—taken for granted in many urban communities but so fundamental everywhere as to make their mention imperative. Perhaps no disaster is more disturbing than a school fire, or sickness arising in a school lunchroom, or a school bus accident (there were 7,186 of them in 1958).

Architectural Considerations

In the last century and early in this century, school buildings were constructed merely to "house" students. Little thought was given to function or to health. The child was, and is, expected to adjust to the environment. He must fit the situation. It is now known how unfair this is. Flexible though child life is, liberal though nature has been in giving children more tissue and energy and strength than they need, they cannot conform to some of the architectural monstrosities and community monuments which are used for schools. When one seeks

the explanation for the high rates of nervous instability, eye strain, childhood accidents, disease among children, one can safely be suspicious of the physical plant of the school. It is responsible for much of the distress and maladjustment of childhood.

Even though there are many thousands of very fine schools, perhaps the ideal school has never been built. Some day it will be. To apply all that is now known about lighting, ventilation and sanitation, paint and acoustics and fire protection will require architectural advances far beyond the traditional. It will require architects who are willing to study children, not just prepare blueprints—who are willing to think through the problems of function and not merely prepare plans of specified cubage.

In some forward-looking communities, having a desire to construct a building commensurate in value to the children who will attend, there will be found buildings showing an architectural reflection of the uses to which the building is to be put. They are built for children, not to fit a building pattern already established. They are built by architects who are as sensitive to the health of children as they are to the structural requirements of the building. The blueprints are not taken from the top drawer and used over and over again. They will be created fresh for each community, for each site, for each conception of the purposes of the school. Such an architectural approach will be organic; it will be functional. It will be useful and not monumental. It will be different from what we are used to. Some typical differences may be shown in the following comparison.

Traditional	Functional
1. Poorly ventilated and damp gymnasiums and locker rooms in the cellar.	1. Above grade in air and light.
2. Shops in the cellar or inside.	2. Shops, like gymnasiums, above grade.
3. Two or three main exits.	3. Exits from each room.
4. Two or more floors.	4. Rambling one-floor plans.
5. Limited play space.	5. Large areas for outdoor work.
6. Fixed room areas resulting from permanent wall construction.	6. Expandable room areas through the use of movable partitions.
7. Horizontal ceilings.	7. Tilted ceilings for better air and light.

8. Sameness in room and laboratory colors.	8. Liberal use of color, contrasting danger colors, reflecting colors, pleasing colors.
9. Harsh resounding walls and ceilings.	9. Acoustically treated walls and ceilings.
10. Rooms straight-away.	10. Diagonally placed rooms for better light.
11. Sharp-angled stairways.	11. Safer ramps and curves more expedient for passage.
12. No facilities for exceptional children.	12. Facilities, handrails, wheelchairs, special rooms, etc., for the handicapped.
13. No health suite for nurse or physician.	13. Space for the nurse and physician.
14. Blackboards.	14. Light-reflecting chalkboards.
15. Miscellaneous heating.	15. Radiant heating.

Modification from the traditional can be made indefinitely. The school of the future will contain ever more adaptations developed for function, for health, or for location. The building will be built by architects of imagination and ingenuity; the product will be a plant in which children will find pleasure and stimulation, wherein they can breathe and see and grow.

As investigation and experience mount up relative to the influence of the physical plant upon the welfare of the student, standards begin to appear. Professional groups of school people and architects have in some instances collaborated on studies which are helpful in school building construction. Many of these standards are published, but they fill more pages than could be used here to reproduce them. Teachers and administrators need but to turn to them, however, to secure valuable assistance in planning for lighting, ventilation, room and laboratory location, fire protection, sanitation, construction materials, paint and color, and other physical elements so important in school construction. The principal guides are:

Caudill, William, *Toward Better School Design*, New York, F. W. Dodge Corp., 1954.

Health in Schools, Twentieth Yearbook of the American Association of School Administrators, 1951, chap. 5, "Healthful School Environment."

Herrick, John H., *et al.*, *From School Program to School Plant—Discussion of Problems of Planning School Buildings*, New York, Holt, 1956.

Joint Committee on Health Problems in Education of the National Educa-

tion Association and the American Medical Association, *Healthful School Living*, Washington, D.C., N.E.A., 1957.
National Council on Schoolhouse Construction, *Guide for Planning School Plants*, Nashville, 1958.
Scott and Westkaemper, *From Program to Facilities in Physical Education*, New York, Harper, 1958.
Sumption, Merle R., and Landes, Jack L., *Planning Functional School Buildings*, New York, Harper, 1957.
The Athletic Institute, Inc., *Planning Facilities for Health, Physical Education and Recreation*, Chicago, 1956.
United States Office of Education, *Children's Body Measurements for Planning and Equipping Schools*, Washington, D.C., United States Department of Health, Education and Welfare, 1955.

The Health Suite

Many school systems, like those in Denver and Minneapolis, are stressing the development of the health suite in the remodeling of old buildings and the building of new ones. This is a group of rooms near the administrator's office which are suitable for the activities of the nurse, the examining or conferring physician, and others who have some concern with the health problems of the school. In 1953 a typical suite was outlined:

SUGGESTED LAYOUT FOR THE HEALTH AND GUIDANCE CENTER IN THE REHABILITATION OF OLD SCHOOLS AND IN THE CONSTRUCTION OF NEW SCHOOL BUILDINGS

HEALTH CENTER OR SUITE

An elementary school in Minneapolis is staffed on a part-time basis with the following special service personnel: visiting teacher, nurse, oral hygienist, speech teacher, audiometer technician, psychologist, and rehabilitation counselor. The unique role of these people in the school is to assist the teacher (1) to better understand the pupils, and (2) to meet the needs of these pupils. In addition, they assist the teacher by (3) accepting responsibility for certain follow-through procedures and working closely with the teacher on pupil classroom adjustment. Effective teamwork of those concerned can best be realized by the construction of a multi-purpose room. This room should provide:

1. *An Examining Room.* To be used for health screening examinations by the school physician, dental screening by the oral hygienist, screening of individual children by the school nurse, speech screening by the speech technician, hearing screening by the audiometer technician, testing by the

psychologist when needed, and for such activities as vision screening, measuring height and weight, etc. It is recommended that this room be soundproofed, and have running water, mirrors, table and chairs, and a cabinet for supplies. The room should be located where natural light is available, and a folding door should be provided to close off this space when necessary. This room can also be used for individual conferences.

2. *First Aid and Emergency Care Room.* The purpose of this room is to provide a suitable place for children who are waiting to be taken home because of illness or an injury at school. This room should include space for two cots and storage for an additional folding cot, a place for first aid supplies, and a cabinet for storing extra first aid supplies.

3. *Individual Conference Space.* Special service personnel and teachers studying pupil records or holding a conference need space for such work which is quiet and provides privacy. Such space can be used by the nurse, visiting teacher, speech teacher, or oral hygienist when in the building. We recommend there be space for two desks and provision for a folding door, in case it is desired to make two separate conference rooms.

4. *Group Conference Space.* An area should be provided which allows for group meetings in carrying out certain phases of the guidance and appraisal program. This space, which should be large enough to accommodate 4 to 8 people, could be used for meetings of the school health council, meetings of the P.T.A. Health Chairman with the school health team, pupil conferences with various members of the health staff, meetings of nurse and teacher, visiting teacher and teacher, the examining of health teaching materials, and committee work.

5. *Other Facilities Needed in the Multi-Purpose Room:*

Toilet or lavatory accessible to all rooms in the area.

Files on movable trucks so they can be moved.

Space in the general supply room for supplies which serve the health center.

Waiting room or circulatory space a part of the general office waiting room.

Provision for a separate telephone line to the health unit, and telephone jacks so that the phone can be moved from one room to another.

A twenty-foot straightaway for vision testing, or a mirror-type testing unit.

Cabinets for supplies.[1]

Of even more extensive detail is the report of the American School Health Association under the chairmanship of Dr. Lee M. Corliss of

[1] Reproduced with permission from the Minneapolis Public Schools.

the Denver Public Schools covering recommendations in detail for all health service facilities in schools.[2]

One who has the responsibility of designing or planning school buildings will find it highly desirable to consult these standard sources in order to allow the physical environment of the school to make its finest contribution to the health of the school child.

The Curriculum

There is considerable lack of understanding on the part of many as to the potential relationship between the curriculum and the health of children. Chapters 2 and 12 have presented the rather disturbing story of psychological maladjustment among children and youth—one of the serious health problems confronting the population. Is the school partially to blame for this serious problem? Can it be stated that to ask millions of young people to conform to a fixed curriculum pattern in order to gain their diplomas is to require in them a conformity for which some of them are not equipped? Whenever education is re-examined, there are some, politicians, military officers, businessmen, even some educators who manifest an unsound concept of the nature of the educable human being. They seem to believe the child is like a sack, to be held by the throat while the goods of education are poured into him "to the limits of his intellectual capacity." Actually no such impersonal treatment of individuals is profitable. The human being is not constructed to tolerate it.[3]

This becomes particularly significant in a land devoted to the development of the individual as its central theme. In a political democracy dedicated to the supremacy of the individual, to his right to development, to his search for self-determination, we must guard very closely against development of school curriculums which will make such attainments impossible and which, on the contrary, will and do shatter the psychological stability of those who are forced into the mold.

[2] The Report of the Committee on School Health Service Facilities of the American School Health Association, *Journal of School Health*, XXVIII, No. 1 (January, 1958), 7–17, and XXIX, No. 3 (March, 1959), 95–113.

[3] Is it not apparent that the rise of nationalism throughout the world, the awakening of the sleeping masses, the revolution against colonial authority, stems from the realization of individuality, an awareness of personal self, this insistence upon self-determination? There is no more compelling fact in the world today than the fact of individualism.

Psychological tyranny can be as destructive to life as the physical tortures of the slave state.

In order to preserve the opportunity for the individual to grow in light of his own capacity and in preservation of his own health, the following guides for curriculum formation are important:

1. Educators understand that not all children are capable of pursuing the same course of study. Diversity and variety are necessary.
2. Competent guidance into curriculums in terms of aptitude, desire, and other factors is frequently an important preventive measure against the psychological breakdown caused by frustration or unhappiness.
3. Parental or public pressure may be destructive as well as constructive. Stimulation to academic choice or endeavor must be made in terms of individual acceptance of it. The type of encouragement given to one child may not be suited to another.
4. Unless recognition is given to "fast-moving" superior children, they may suffer boredom and frustration destructive not only of their best talent but, conceivably, of their life. Special pathways to diplomas and degrees should be developed for the exceptional student.
5. Unknown at the moment are the effects upon the health of children of such matters as the size of class, size of school, homogeneous and heterogeneous grouping, coeducational classes and schools, and marking by symbols versus prose reports and conferences.[4]
6. As a general guide, curriculum which is adapted more to individual needs than to mass administration will contribute more to the health of children than other types of curriculums.
7. Diversity within the curriculum is essential. There is a fundamental truth in the old saying, "All work and no play makes Jack a dull boy." The whole child profits mainly from a whole experience. Learning is dependent upon the quality of human tissue and thus adequate opportunity for physical education and for health instruction become important and consequential.

Teaching Practices

The personal relationship between teacher and pupil is often the most significant health influence in the school. It is out of such relationship

[4] Excellent judgment, however, on some of these questions is expressed in chaps. 2, 3, and 4 of the Report of the Joint Committee on Health Problems in Education, *Healthful School Living*, 1957, chaps. 2, 3, 4.

that uncorrected nearsightedness is discovered. The early signs of postural differences which later may be related to a brain tumor are reported. The childhood depression attendant upon failure is prevented and the confidence and inspiration needed for a lifetime of productivity are engendered. The teacher who likes students, who is happy to teach, who studies his pupils as well as the material to be taught, who maintains the businesslike, economical, but informal atmosphere of the classroom will make a contribution to the health of students.

One of the most critical teaching practices is that of evaluation, of grading and marking. Our world puts an extraordinary premium upon the symbol grade. "He is an A student" or "one must have a 2.7 to enter graduate school" become identifications far beyond either their importance or their truth. The carnage in frustration, blasted hopes, and the distortion of ability which much of the time attends such unwarranted use of symbols is virtually as malignant a source of ill health as would be a staff of teachers who were actively tuberculous. Clinics are filled with students who have been judged either better or worse than they are. Accuracy of appraisal of student ability is as difficult to attain as immunity to rheumatic heart disease.

Nevertheless, the teacher must strive for accuracy, fairness, and objectivity in the appraisal of student progress. This is fundamental to the establishment and maintenance of healthful relationships in the classroom.

A second essential to the development and maintenance of health through the influence of teaching practices is the recognition and acknowledgment of individual differences. It would be unnecessary to record here the scope of these individual variations. They involve every human characteristic and attribute from size to sense of humor, from appearance to constitution. *Much of this variation is organically based*—in inherited structures, glandular physiology, and metabolic differences. The teacher who can, through observation and acquaintanceship, discover these differences and gear the classroom practice to them will be more effective in producing both personal and academic results than the teacher who ignores them.

The "Atmosphere" of the School

Irritable, belligerent, annoying children are frequently products of a school "climate." In contrast, fair-minded, cooperative, and enthusiastic children are also produced out of that intangible atmosphere. These

attitudes have health implications. A school which lacks a health program, which fails to detect fatigue from overwork, which assumes detection of inadequate vision to be a home problem, which makes no effort to provide healthful housekeeping, can expect trouble. Likewise, when children come to school from bigoted homes, from a background of malnutrition or disease, or from a community where human life is held cheaply, they provide problems for an enlightened staff to solve.

The first step toward the development of a healthful school atmosphere is staff agreement on objectives in terms of child development. Thereafter a fully developed school health program to meet needs as they develop is important. The essentials of such a program have been described in preceding chapters.

Health and Emergency Protection

The school has three responsibilities in regard to emergencies and accidents. One is to prevent accidents from happening in school; the second is to offer instruction in the curriculum regarding safety; and the third is to execute a program of action when emergencies happen at school. The latter is all too frequently neglected on the theory either that "accidents will not happen here" or that "when something does turn up it will be handled by common sense." Neither position is tenable. Accidents, fires, explosions, food poisoning, emergencies of nearly every kind can and do happen at unexpected times and in unexpected places. And when they occur they are not always handled well because of the panic, excitement, forgetfulness, or lack of knowledge of one or more key persons. The unexpected must be prepared for. Every contingency must be met.

There are many good and bad examples of meeting emergencies. In a medium-sized school known widely for its attention to the health of children plans had been made for the unexpected. It occurred. One day in assembly children began to be nauseated. Within an hour over a hundred children were in various stages of collapse from food poisoning. At the first sign the school's emergency care program was in action and continued throughout the experience. Ambulances were called, physicians and nurses were summoned, parents were notified, family doctors were called, children were taken to a nearby hospital, and public health authorities were summoned. Later an investigation was held and corrections were made in the refrigeration of foods. Throughout the emergency all was done that could be done and with-

out panic, noise, or unnecessary fanfare. The teachers and principal *knew* what to do because they had *planned* for it. Eventualities had been anticipated—and answers had been provided.

There are several steps to be taken toward the provision of complete plans for emergency care:

1. The faculty of the school must be made aware of the possibility of accident and emergency and must be responsive to the suggestion that they work out plans for any eventuality.
2. Every teacher in every room, shop, or gymnasium must think through what she would do in case of fire, explosion, or panic.
3. These plans must be correlated into a master plan, put in writing, and well studied and understood by all school personnel involved.
4. A roster of every pupil showing name, parents' names, address, home and business phone, name of family physician or physician of choice in case of emergency, hospital of choice, special directions for dealing with accidents, allergy sensitivities, and religion should be

(NOTIFICATION CARD FOR EMERGENCY OR SICKNESS)

Pupil's Name _____

Parents' Names _____ Phone _____

Home Address _____ Phone _____

Father's Business Address _____ Phone _____

Alternate Person to Be Notified _____ Phone _____

Doctor to Be Notified _____ Phone _____

Alternate _____ Phone _____

If emergency treatment is required can the school authorities use their own judgment in sending the child to the hospital or doctor most easily accessible before parents are reached? Yes_____ No_____

If "No" give name of preferred hospital _____

preferred doctor _____

FIGURE 6. Sample Notification Card. (SOURCE: School Health Guides No. 2, Committee on School Health, Ohio State Medical Association, Columbus, Ohio, 1957.)

placed conveniently near a telephone in the main office. In case of accident the school, being morally responsible to give immediate care, would do so in accordance with practice agreed to and instructions from parents.

5. Plans for transporting children to home or hospital must be made. They should provide for available private cars, school buses, ambulances, or other means with the method of calling drivers, and means of paying for the trip all worked out in advance. Nothing should be left to after-the-accident argument. If insurance is carried on public conveyors its coverage should be well known to all. If private cars are used at times of accidents certain ones should be used and the insurance on them should be in force. It would be well to know what exits would be used in the event injured children had to be taken from the building to cars. Nothing would be lost if every conceivable detail were covered.

6. First-aid and emergency cabinets must be provided and placed at strategic spots around the school.[5] Their contents must be fresh, up to date, and in accordance with the best standards for first-aid care. It is not necessary for every teacher to be expert at first aid; one or two on each floor should be. However, the physical education teacher, nurse, principal, industrial arts and home economics teachers most assuredly should be.

7. At the first indication of an emergency code, signals should be given throughout the school calling all first-aiders, or calling all drivers, or calling a general exodus from the building as in a fire drill. In one school Boy Scout and Camp Fire Girl first-aid teams are called when needed; they were definitely needed one day during a flash storm which knocked down high-tension wires and pinned several children.

8. Parents or guardians should be notified calmly and as early as practicable, and every needed assistance should be given them in caring for their children.

9. "Some schools in thickly populated sections prefer to have all first aid performed by physicians. They enter into contracts with a panel of physicians whose offices or clinics are nearby and for a fee,

[5] For more elaborate details on appropriate physical facilities for emergencies, first-aid stations, supplies, and standing orders for meeting emergencies see The Joint Committee on Health Problems in Education, *Healthful School Living*, Washington, D.C., National Education Association and the American Medical Association, 1957 and *School Health Services*, Washington, D.C., The National Education Association, 1953.

the physician drops what he is doing at the moment and comes to the school for first aid purposes. The further disposition of the case depends upon the instructions previously received from the parent."

10. "The school medical adviser should prepare detailed instructions and standing orders for the guidance of teachers and the school nurse with reference to the immediate treatment for such common school emergencies as abdominal pain, cuts, bruises, dog bites, suspected fractures, painful menstruation, and headache, as well as less frequent emergencies like epileptic attacks or insulin shock."[6]

11. Parents should be informed of every plan made by the school in anticipation of accidents and emergencies. They want to know that their child will be well cared for in case something unexpected happens. Informing parents of plans in advance gives them a chance to suggest modifications and obviates any criticism which might be leveled later if a parent did not approve the action taken.

12. The school should have stated plans for the handling of accidents occurring in athletic competition. These plans, in the form of either insurance or outright subsidy by the board of education in case of injury should be well known to players and parents and should be given wide notice in order to avoid misunderstanding after an accident. Insurance plans are receiving wide use, particularly in high school athletics, and experience with them so far has proved their value.

13. A report of each accident or other emergency situation should be kept on hand in the principal's office. This should include names of persons concerned, time, location, nature of the accident, witnesses, and disposition of the case. Such records are frequently of great importance in later discussions of prevention or liability.

Released Time

There are many and varied circumstances which make it desirable for children to come and go from school at other than opening and closing hours. Field trips, dental appointments, emergency calls from home, pupil illness or accident are among the causes which make it imperative that a policy be established which will be understood and effectively followed by all. This becomes even more important when one realizes

[6] *Suggested School Health Policies,* Prepared by the National Committee on School Health Policies of the National Conference for Cooperation in Health Education, 1946, p. 20.

that the school is the moral if not the legal custodian of children during school hours and thus protects them against kidnapping, molestation, and other unwarranted and dangerous influences.

As a guide to schools in the establishment of such a policy, the Joint Committee on Health Problems in Education prepared in 1954 the following statement:

1. Pupils should be released from school only to their parents or to persons authorized by their parents. The principal should check carefully to make certain that the person claiming to represent the parent is so authorized.
2. Pupils should be released to police officers only if a warrant is issued.
3. In cases of family dissension (divorce, step-parents, grandparents of separated parents, etc.) the request often comes to prohibit one party of the conflict from taking the pupil from school. Such requests should be honored only if legal status is established.
4. Pupils should be excused on days of religious observance upon request of their parents or guardians. A note signed by the responsible person should be brought prior to the day of observance.
5. In the routine of some schools, pupils travel during school hours from their own school to another school for such purposes as instrumental music lessons or swimming instruction. Signed permission should be obtained from the parent for such trips before they are made, but this does not eliminate the responsibility of school personnel to provide reasonable safeguards for the trip.
6. Teachers should be instructed not to admit unauthorized visitors to the classroom without a note from the office. Signs on school doors should so instruct the visitor.
7. Principals should make every effort to prevent unauthorized use of school toilets by the general public.
8. An elementary school pupil who is ill or injured should be sent home only with the parent or with another authorized and reliable adult if the parent is not available.
9. Requests for excuse from school to keep dental and medical appointments should be honored.[7]

Readmittance

A desirable policy on readmitting children after absences caused by illness has been well stated by the Joint Committee on Health Problems in Education:

[7] *Healthful School Living, op. cit.*, pp. 26–27.

A pupil who is returning to school following illness, or one who has been excluded on account of a reportable communicable disease should be readmitted to class in accord with local policies governing such actions. A certificate from the health officer, the family physician, or the school physician may be required. The exact procedure may vary somewhat depending on school and health department regulations. The length of time a child is excluded depends on the nature of the illness and the time required to achieve full recovery. In larger school systems, pupils report directly to the school health service personnel while in smaller schools, such pupils report to the principal or teacher.[8]

THE SAFETY PROGRAM

In addition to a well-established emergency care program, every school will want a continuously operating all-school safety program. In 1958, there were 6500 accidental deaths of school age children (5–14). Some of these were due to failure on the part of school personnel to establish safety programs. Two out of every five school accidents occur in organized athletics. Classroom and traffic accidents are the second and third most numerous. The National Safety Council can inform any interested person on the frequency and location of school accidents.[9]

The accident is a serious health problem. There were 44,973 school accidents in 1957 from a reporting school population of 2,483,000. The accident rate (number of accidents per 100,000 school days) is 10.6 for all grades compared to 5.0 for the nonschool jurisdictional accident.

Prevention against childhood accidents begins at home, of course, but an all-school safety program is an essential element of a program of school health education, and will operate as follows:

1. An all-school safety council, large or small, depending upon the size of the school, should include both teachers and students. Teachers of laboratory and shop classes, including physical education, should be represented, as well as the nurse and physician, if they are available. The principal should be a member ex officio. This safety council or committee would (a) continuously analyze the cause and prevention of accidents in their own and other schools; (b) recommend to the fac-

[8] *Healthful School Living, op. cit.*, p. 71.

[9] National Safety Council, *Accident Facts*, annual edition, Chicago, National Safety Council, 425 N. Michigan Ave.

ulty and board of education ways to prevent the occurrence of accidents; (c) provide teaching material in safety education to those giving health instruction anywhere in the school, and assist in the continuous improvement of curriculum materials in safety; (d) arrange visual material for bulletin boards, plan assembly programs, and in every intelligent way promote safe living in the school environment; (e) formulate and supervise a program of safety for the school, including an emergency care program, fire drills, traffic supervision, and continuous inspection of buildings and grounds for danger spots and potential causes of accidents.

2. A thorough and modern program of traffic safety both within and outside the school is essential. Children must be brought from home to school safely and local police authorities should be invited to assist in directing traffic, marking streets, installing traffic lights and signs, and in discussions with children about moving in traffic. Inside traffic must be regulated to assure the efficient flow of movement within the building between classes. The school safety patrol can be organized to develop and maintain this traffic program.

3. The school bus program must leave nothing overlooked from the standpoint of safe practice. All state and local standards for school bus driving must be met completely and without exception. Drivers must be expert and without organic or psychological handicaps which would lower their efficiency as drivers and thus endanger the students. Buses must be equipped with safety exits, fire extinguishers, and first-aid materials in sufficient quantity to care for a full load of children. No bus driver should ever allow more than the maximum number of passengers provided by law to board the bus. Warning lights, signals, and other paraphernalia must be in accordance with the best in local standards.

4. A program of laboratory, shop, and gymnasium safety must anticipate every contingency. Moving shop parts should be painted in danger colors. Gas jets should be colored different from water outlets. Draft hoods for removing smoke and odors should be working whenever the laboratory is in use. Good housekeeping—everything in its place—should be the prevailing practice. There are dozens of such suggestions which teachers of special subjects will want to observe; some of these may be found in the Selected Readings at the end of this chapter.

5. The entire staff should study and understand all local laws and

ordinances pertaining to school safety and liability for accidents. This material might be provided by the safety committee. Staff discussions on prevention and liability are interesting topics for faculty meetings and go far in making a usually careless staff more alert to their responsibilities in the prevention of accidents.

6. Subcommittees on safety should be appointed from among the pupils in each room. These student committees should help to organize fire drills, be responsible for safe practice within the room, and provide discussion materials on safety for room use. The room committee can assume charge of room traffic and develop the safety program in shops, corridors, and physical education classes, both indoor and outdoor.

7. Programs for the regulation of bicycle travel and parking, school dances, night use of the building, smoking on the premises, handling of crowds at athletic contests and other gatherings should be worked out by the school safety council and their provisions made effective in the life of the school.

8. Courses for secondary students in driver training should be instituted whenever possible.

Liability

In many communities it is not uncommon for parents or guardians of children injured at school to bring suit for damages against school personnel. In such instances it is alleged that the school personnel were responsible, perhaps through negligence, for the accidents. For protection against this practice as well as for the welfare of the children, school people should know as much as possible about the liability laws in their state.

The Joint Committee on Health Problems in Education has this important statement to make on the problem:

> Laws regarding the liability of school personnel for accidents occurring to pupils under their jurisdiction vary somewhat from state to state. School administrators should institute in-service programs by which teachers, bus drivers, and other personnel can become informed concerning the liability laws of their states. More important, they should learn how these apply to diverse situations and identify the factors which determine whether or not they may be held liable.
>
> In general, negligence results in liability. Failure to take reasonable

precautions against accidents, to warn pupils of hazards, or to provide necessary supervision, can make a school employee liable.

Failure to provide first aid can be interpreted as negligence. Schools should be prepared to give first aid for all types of emergency sickness or injury. This preparation includes the development of written policies and procedures for the care of emergencies and the distribution and interpretation of such material to all school personnel. These statements should recognize the responsibility of school personnel for (a) giving immediate care, (b) notifying the pupil's parents, (c) getting the child home, and (d) guiding the parents, when necessary, to sources of treatment.[10]

Liability is usually determined by a jury, if the case comes to trial; hence, judgment will vary from case to case.

School personnel will profit by protecting themselves and the school children with the institution of a full safety program, and by continuously acting in a carefully planned nonnegligent manner whenever on duty in the school.

SELECTED READINGS

In addition to the reading prominently mentioned in the chapter the following have a contribution to make:

American Association for Health, Physical Education and Recreation, *Safety in Physical Education for the Classroom Teacher,* Washington, D.C., 1951.

American Society of Heating and Ventilating Engineers, *Heating and Ventilating, and Air Conditioning Guide,* New York, 1955.

American Society of Mechanical Engineers, *American Standard National Plumbing Code,* New York, 1955.

Beadenkopf, William G., M.D., M.P.H., Adele K. Polan, M.A., Walter E. Boek, Ph.D., Robert F. Korns, M.D., Dr. P.H., and George James, M.D., M.P.H., "An Epidemiological Approach to Traffic Accidents," *Public Health Reports,* LXXI, No. 1 (January, 1956), 15–24.

Doscher, Nathan, and Walke, Nelson, "The Status of Liability for School Physical Education Accidents and Its Relationship to the Health Program," *Research Quarterly,* XXIII, No. 3 (October, 1952), 280.

Florio, A. F., and Stafford, George T., *Safety Education,* New York, McGraw-Hill, 1956.

Goddard, James L., "Accident Prevention in Childhood," *Public Health Reports,* LXXIV, No. 6 (June, 1959), 523.

[10] *Healthful School Living, op. cit.,* p. 88.

Joint Committee on Health Problems in Education of The National Education Association and The American Medical Association, *Healthful School Living*, Washington, D.C., 1957.

University of the State of New York, The State Education Department, Division of Health and Physical Education, "Inspection and Supervision of the Health Aspects of the School Plant," *Sanitary Survey Form*, Revised Edition, Albany, 1948, p. 12.

— 16 —

Administrative and Personnel Interrelationships

It is apparent to all experienced workers that the development and execution of a program of school health education is not a one-man job. It requires the cooperative effort and effective coordination of several professionally trained people willing to pool their knowledge and ability for a common beneficiary—the school child. In its beginning the program may have involved only a teacher of physiology who taught young people some of the great facts of life. Or it may have centered in a physician who came to the school to examine for vision and teeth and who considered the examinations of value only as a source of statistical summaries. In other situations the physical education teacher was the sole purveyor of health instruction and his work was devoted to the development of the muscular strength and coordination that might come from the exercises of the day. School health education in the nineteenth century was well intentioned but inadequate and was conducted chiefly by professional personnel working by themselves and without a planned relationship to each other.

In contemporary times the situation is wholly different. In a fully integrated school health program the child as a whole takes the center of the stage. Objectives in child development are agreed to and sought. His health and welfare, his psychological and social development, his safety and his immunity all become prime considerations along with his intellectual and academic advancement. It becomes imperative that all things which go on within the school experience contribute to and do not detract from the total development of the student. To bring this ideal to its fullest maturity obviously requires the highly coordinated effort of many persons, none working in isolation from

the other but all within a master plan to the ultimate benefit of childhood.

SOME BASIC CONSIDERATIONS

Before dealing with administrative relationships it would be well to consider several matters basic to the attainment of such cooperative action as is needed in a well-rounded school health program.

1. *Many talents are needed.* There is a place in a full health program for physicians, nurses, teachers; special teachers of physical education, sight saving, speech reading, home economics; psychologists, dental hygienists, dentists, social case workers, immunologists, dietitians, sanitary engineers, school administrators, and some others of specialized and nonspecialized ability. The talents of all these can be used. Their counterparts from the consumers' side are, of course, the children and their parents. Little can be done without some of these key professionals; likewise little can be done without the full participation and cooperation of these consumers. A school health program is truly a huge experiment in group action aimed at the improvement of the life of a given child.

2. *The talents must be used in an atmosphere of mutual respect and professional confidence.* Success in school health education comes when each professional recognizes the worth of the contribution of the other, refuses to usurp more scope or more credit than is his due, and shares in the thinking, planning, and execution necessary to get the job done. It is at this point that many school programs have wavered and occasionally collapsed. It is not always easy to get a group of individualists to work cooperatively. Sometimes the teacher assumes far too much prerogative in the guidance of a child or, worse, discounts the efforts of others as they try to affect the life of one of her classroom children. Sometimes the physical education teacher assumes far too much in the sphere of diagnosis or fails to make use of the best of scientific information in giving health instruction. Sometimes the physician, prepared in a highly individualized professional tradition, finds himself unable to appreciate the work of others or, worse, insists that all school health work be considered his private reservation and all other participants subject to his direction. Such manifestations, in whomever they occur, are always unfortunate. They jeopardize the attainment of the objectives in child development.

Careful study must be made of personnel interrelationships, and personalities must be geared to allow for smooth operation without the friction of professional jealousy or mistrust.

3. *A program of school health education should not be an object of charity.* Contributions to it should not be sought on that basis. In the early days many physicians and some nurses were asked to give their services free for examinations or screening. Others were urged to contribute books, equipment, or time. Private practitioners were asked to examine children and give the summary of their findings to the school. With rare exceptions this charitable approach to administration has been a failure. Physicians have their professional competence to sell. Others have specialized talent costing them years to develop. Such skills should be bought and paid for by the school if it expects to make good use of them. No part of the program which involves any measure of *professional* competence should be performed without adequate compensation.

4. *A school health education program is an educational enterprise—not a medical one.* It is *not* in competition with the practice of medicine. It is complementary to medicine, supports it, educates school children to patronize it, discovers individual needs for it, but does not compete with it. School health education has no aim eventually to substitute its services for those of the private physician.

There has been much misunderstanding here. There are some physicians and public health workers who have the misconception that the health interest of educators is a proprietary one. They are apprehensive lest the outcome of school health education be the destruction of the private practice of medicine and the substitution of some form of state medicine. Three things must be said in this connection. First, there is evidence to show that where complete school health education programs have existed there is not *less* but *more* demand for the services of physicians and public health workers. Second, the school has a legitimate purpose in concerning itself with the health of the child. It realizes that education cannot go on fully and constructively unless the child is in good health. It tries not to waste public funds in attempting to educate children who are unfit to receive an education. Third, to teach about health, to organize experiences pertaining to it, and to carry on education in a healthful environment are all parts of the basic purposes of a school. The school must give its students control over the means of existence, over life. Certainly learning about health and living health-

fully can be considered in no other way than as a means of furthering our existence and theirs within the scope of education. There is no infringement upon the province of the physician, the hospital, or the clinic. There is thus no ground for discoordination. A school health education program deserves the cooperation of all professional personnel united to serve within it.

5. *The school is in no position to finance extensive curative or remedial medical or dental programs at public expense.* Of course, exceptions are being made but in nearly every instance the exceptions are endorsed by the medical and dental groups in the community who appreciate the fact that only through these means will the children involved be properly cared for. Principally, however, the school acts merely as an interested community agency willing to stimulate others into finding the means to do a needed piece of work for the benefit of handicapped or ailing students.

It is well recognized that there are millions of people unable financially or unprepared intellectually to seek and get medical service. The school sees their need, at least insofar as the need is expressed through the children, and is in a position to encourage social and public agencies in their efforts to bring medical aid to them.

6. *The emphasis in school health education has moved from the mass to the individual.* This is a general trend in all of education. It becomes no longer important to survey thousands and thousands of children in an annual physical examination unless within such a program *each* child is given thorough attention and his individual status and needs are discovered and adequately dealt with. Just as physical education has moved from the former practice of marching thousands on the field for the same exercises given to all at the same time, to a program of activities taught in small groups and in the light of individual needs, so also has school health education veered away from mass production. As Baumgartner expresses it: "For school health this [means] that finding what the individual child needs and building a program to meet those needs comes first."[1]

Thus, in school health education, as in all education, the workers must never lose sight of the fact that they are dealing with persons—with individuals. Neither the medical office nor that of the counselors nor the physical educators can, in the light of this trend, ever become

[1] Leona Baumgartner, "Some Phases of School Health Services," *American Journal of Public Health*, June, 1946, p. 631.

impersonal centers where so many cases are handled per day and where the individuality of the student is observed with cold professional efficiency. Little educational value and much harm become the products when any phase of school health education loses the personal touch and becomes a mechanical thing.

ADMINISTRATIVE ORGANIZATION

From an understanding of the foregoing six basic considerations which underlie work in school health education, one sees that administrative organization can become somewhat complex. And yet, as state and local programs have developed, certain agreements have arisen as to points of view and, although there is little standard practice in local organization, some similarities in the placement of responsibility are beginning to appear.

Role of the Federal Government

It is generally known that the federal government has little or no administrative control over local school procedures and programs. Except in those instances when federal money is appropriated (e.g., for school lunches, for vocational agriculture), the government exercises merely an advisory and research function in relation to education in general and to school health education in particular. Where federal money is appropriated for the support of educational enterprises, Congress has usually established minimum standards for local acceptance and left the enforcement of those standards to an appropriate executive branch. Otherwise, the tradition of local autonomy in education persists, and states are reluctant to give up their rights in determining the kind of education their people should have. As time goes on, however, and the movement for equalizing educational opportunity over the nation gains more popularity, it is entirely possible that the federal government will have increasing control over the administration of local programs because of the use of federal funds in their support.

Furthermore, Congress may some day become interested in legislation specifically directed at school and college health and physical education and may be willing to subsidize much of a school health education program as it is now known. Such bills as may be drawn up for that purpose will probably call for the acknowledgment of basic minimum standards in program and personnel. Depending entirely upon the

state and local administration thereof, such bills may have a salutary effect upon the extension of the benefits of school health education to more and more children.

The chief executive agencies in the government having influence in school health education are the Department of Health, Education, and Welfare (in which will be found the Office of Education, the Public Health Service, the Children's Bureau), and the Department of Agriculture. There are many others. At one time it was determined that over 70 bureaus or agencies within the government had something to do with the health or recreation of the people! But the above-named offices are the principal ones. The Office of Education provides a great deal of assistance in the form of information, field consultation service, research data, and information on trends which is of use to local and state groups. The other three agencies are likewise of great assistance to local groups in providing information. They operate together in giving suggestions on policy and standards which guide school systems over the nation in the development of health education. Teachers and administrators will find all these agencies available for consultation through field representatives or by correspondence.

Role of the State Government

Most states have active programs in school health education operating out of state departments of public instruction or state departments of health, or both. These departments are the instruments used by the state legislatures for the execution of whatever legislation is passed benefiting the health of the school child. It becomes exceedingly important to all personnel in school health and physical education locally to know the limitations and possibilities of program development as established by state law.

State supervisory programs not only interpret existing statutes for the benefit of communities but extend a great deal of consultative service as well. These programs are ordinarily located in departments of public instruction and are thus under the administrative direction of the state superintendent. In some states, however, the office is located in the department of health and in others the two share the work. The most fortunate states are those that not only have such programs established but have the two principal departments—health and education—working in complete harmony and in enthusiastic support of each other in their relations to school health education.

Where friction or misunderstanding exists between these two departments the echoes of it are heard in disharmonies in state and local medical societies and educational associations, and between local physicians and educators.

In Cities and Smaller Communities

Below the state level is found an old, traditional standard practice in regard to school administration. The city, district, and county board of education has long enjoyed the privilege of determining its own program and employing its own personnel subject only to the approval of the state department of education. Thus, a superintendent of schools assumes responsibility for all that enter the educational program and is the administrative and executive officer of the school system.

With the development of a modern program of health education, including both health instruction and health service phases, this framework of administration has to be re-examined to see if the job of health education can get done within it. As soon as schools began to employ physicians and nurses, as soon as physical examinations, immunization programs, and screening and referral systems were established, the question arose as to whether all of that sort of activity did not belong under the administrative jurisdiction of boards of health rather than boards of education. Should physicians and nurses be employed as school personnel and work in schools and communities without any official relationship to the official health agency, or should the local health authority supervise and conduct all of the activities going on within the school? Under whose banner should the school health service function?

The problem has never been completely solved in all states. Three patterns of administration have emerged: one in which the schools operate their own health program, i.e., under the administrative jurisdiction of the board of education; another in which the board of health has administrative responsibility; and a third in which there is a joint administration. A 1958 study of such arrangements showed that 74 percent of the health services in cities were under the board of education, 10 percent under boards of health, and 16 percent under joint administration.[2] Characteristically, the health services producing the fullest

[2] Elizabeth A. Neilson, *Results of Analytical Study of School Health Service Practices in the United States,* Lowell, Mass., State Teachers College, 1958, pp. 1–2.

services are found in the large cities and under the jurisdiction of the boards of education.

Such divergence or variation in administration suggests weakness or ineffectiveness in coming to grips with this basic administrative problem. Actually, however, the problem of gaining effective action can be solved regardless of administrative placement provided policies are developed cooperatively between the two groups and teamwork is substituted for unilateral action. If lines of communication can be established and professional responsibilities and allegiances clearly defined, the program can move.

In communities where some jurisdictional dispute over the administration of the school health program does exist, the people involved should test out each of the following arguments to ascertain where the program could be administered with most constructive effect.

Certain advantages in having the school health service administered by the school system itself have been advanced and rather generally accepted as being valid. They include:

1. There is usually greater efficiency and simplicity in the single administration.
2. There is usually better understanding of the school needs by the health service.
3. Greater interest comes from increased responsibility on the part of the school personnel.
4. There is better acceptance of the health program when it is within the same agency.
5. More emphasis can be given to school health than when it is one among many public health activities.
6. There is closer integration of health service and health education.
7. Through the teachers the parent-teacher association shows better cooperation and interest.
8. Greater success in obtaining funds for school health services can be expected in the much larger educational budget.
9. There is usually less turnover of health personnel.

To a large degree the advantages just listed add up to a higher degree of intramural integration and effectiveness of the school health services.

Advantages have been advanced and again rather generally accepted for the school health service being administered by a health department. They include:

1. A health service program is more properly administered by health personnel in a health agency.

2. More appropriate definition of duties and use of the time of health personnel is likely.
3. Rotation of personnel through related health activities to obtain broader experience is possible.
4. In rural areas with scattered small schools part-time nursing service for each school is more easily obtained from the health department district nurse.
5. Greater likelihood exists of including the school in various community health activities, such as a tuberculosis control program.
6. Health services are extended to parochial and private schools more easily under health department administration.
7. Health department administration results in more authoritative content of the health education curriculum.
8. By administering the school health service the health department is stimulated to encourage the development and expansion of community health resources for children and through its contacts with other agencies to assist in setting standards and improving service.
9. It is an economic waste to have multiple health administration in a community.
10. Health departments usually give greater emphasis to health supervision and selective examinations than to safety and annual examinations.

To a large degree the advantages just listed add up to attaining better extramural integration of the school health service with related health activities.[3]

In this connection it is always helpful for school personnel to remember that the scope of activity for local health authorities is usually prescribed by law and thus their duties impinge upon the school population. Children are children first and school children second. Health authorities see children as part of the public for whose health they are responsible, and thus it is entirely essential that school and health personnel cooperate so as to get *both* jobs done. School people should realize that health officers are charged by law to:

1. Enforce all state health laws and regulations.
2. Prepare and enforce regulations for the control of communicable disease.
3. Record incidence and instances of communicable disease.

[3] Samuel M. Wishik, M.D., "Administrative Jurisdiction of the School Health Service," *American Journal of Public Health*, July, 1951, p. 819. Copyright, American Public Health Association.

4. Investigate all instances of disease, carriers and contacts.
5. Under some conditions, supply and administer vaccines and serums.

Those and many other legal and traditional functions of boards of health bring them in close contact with school problems.

At all events, regardless of where the final budgetary and administrative jurisdiction lies, the following features of a smooth-running and adequate school program should be preserved and maintained:

1. Joint planning for school and community programs between boards of education and health should be a constant feature of any system.
2. School personnel should welcome the advice and consultation of health or medical personnel at each stage of program development.
3. Medical personnel should learn to work with school people, to understand their problems, and cooperate within rather than dominate the program.
4. Health departments should be constantly ready to improve the in-service preparation of teachers.
5. School and community health councils should invariably carry adequate representation from both health and education administrative offices.
6. In any given school building the administrative authority of the principal over all activities, including health service, must remain.
7. Medical personnel (physicians, nurses) who have some preparation in the field of professional education have an advantage in working in an educational setting.
8. Boards of education, charged as they are with the responsibility for the education of the children of the community and recognizing the basic *educational* character of school health education, can be encouraged to work cooperatively with boards of health on mutual problems without relinquishing administrative jurisdiction over any part of the educational program.

Qualifications

Some localities and some states are perplexed over the problem of qualifications of the administrative personnel for the program. Should a physician or an educator be chosen to administer, supervise, "head up" the program?

There is no standard practice. Good work is being done under both. Whether a physician should head the school health program or whether an educator should be its principal officer depends almost wholly upon the administrative skill and personal qualifications of the persons in question. In cities or counties large enough to have a staff of supervisors or consultants at work in this field, the medical or educational background of the person is of less importance than his conception of the program and his organizing ability. In smaller school systems where there may be one supervisor of health education in a county or a small city or village, the possibilities are that the position will be held by a specialist in health education or in health and physical education. Physicians are rare in these positions not because they are disqualified on professional grounds but merely because there are not enough of them available to serve communities in that way.

These central office supervisors or consultants, working directly under the superintendent, are helpful in assisting elementary teachers with instructional plans and materials, providing teaching aids and demonstrations, aiding in the appraisal programs, supplying new materials for teaching, coordinating school and community effort, and facilitating in every way the development of school health education in the communities, in the individual schools, and with the administration. In many rural areas the consultant becomes a traveling teacher and may be on the staff of six or seven schools teaching in each one and conducting health service activities in them all.

Organizational Plan in Schools

What shall be the plan of organization in a given school? Regardless of the size of the school, is there a standard organizational plan which can be recommended? How will the various personnel involved fit into this scheme of things?

THE HEALTH COUNCIL

The formation of a school and community health council (or committee), with a council chairman chosen from available trained personnel, seems to be the best administrative plan for single schools. Experience is proving the soundness of such a plan. The council gives everyone concerned a chance to participate in the formation and conduct of the program. It assures the various special interests concerned

with child health an opportunity to be heard. The council and the chairman are mutually dependent and helpful, and under an able school principal many fine school programs have come into being as a result of this cooperative effort.

In some places the council does not have community interests represented but confines its membership only to school personnel and its activities only to school matters. It serves in this way as a school committee on the health program. Current thought, however, favors a broadening of scope to include community interests and thus gives tangible recognition to the fact that the health of the school child is the concern of many and not only of school personnel.

The health council or committee plan is adaptable to any school, large or small, rural or urban. The work of each is planned in relation to local needs. A survey may be made, needs established, and committees invited to undertake the work. The list of activities to be undertaken will depend largely upon the imagination, insight, and conscience of the members of the council.

The principles of a health council are part of the American tradition which emphasizes the right of each citizen to help make decisions which determine the conditions under which he lives and functions. They acknowledge the obvious need for many persons to work together toward the solution of common problems and recognize the many ways in which persons, groups, and communities can benefit when democratic procedures are practiced.

Experience has shown that through a health council people can develop solutions to problems that are too big for any one agency or professional group to handle alone. The health council's contribution is to establish an environment in which its members can function with maximum effectiveness. It is designed to increase understanding of school and community problems, to point up needs which are not being met, and to examine possible ways of meeting them.[4]

For effective action, the organization of such a body either wholly within the school or joining forces with the community should remain as simple as possible. Its officers could well be only a chairman, a secretary, and perhaps an editor for whatever publications the council

[4] National Education Association and American Medical Association, Joint Committee on Health Problems, *School Health Services*, Washington, D.C., National Education Association, 1953, pp. 387–388.

chooses to issue. Subcommittees can be appointed for continuous function and reporting to the council on emergencies and accidents, the school environment, disease control, appraisals and screening, school-home relationships, athletics and physical education, research, or any other large area of health interest. The membership on committees and officers of the council many be rotated every two or three years for variety and sustained interest.

The membership of the council should include persons interested in child health and willing to work cooperatively for its betterment. The list of potential members of such a council usually includes:

From the School	From the Community
The principal	Physicians
Physical education teachers	Dentists
The nurse	Ministers
The physician and dentist	A PTA representative
The psychologist	Representatives from service clubs
Teachers	The public health officer and nurse
The custodian	Any appropriate civic leaders
Students	The mayor or a councilman
The dental hygienist	Specialists in contributing fields
The guidance counselor	

Such a school and community health council could be small or very large. If the latter, it should have a strong program committee to guide the work, a competent chairman, and a well-conceived plan of action. Individual schools within the community where such large councils exist would want individual school committees chosen from school personnel only.

The best way to understand how health councils operate is to study the mechanism and accomplishments of some of them.

1. An example of agreement on basic principles.

The Grand Rapids-Kent County, Mich., school community health council agreed on the following:

Introductory Statement. Community organization for health is a cooperative effort to achieve action in behalf of community health and well-being. It is best accomplished through the machinery of a Health Council or its equivalent. The purpose of a School Health Council is to bring about

an *orderly development* of a well-balanced and adequate school health program. It does this primarily through organization and coordination rather than by giving direct service. Its activities are closely related to those of other groups engaged in community planning for health, welfare, and recreation services.

Principles. The following general principles are basic to the effective functioning of a school health council:

1. *It should bring together the efforts, the thinking, the resources and the interest of all organizations and individuals working in the cause of good health for the school child.*
2. *It should encompass the whole range of health needs of the school child* and should utilize all available resources—governmental and voluntary, local, state and national—for serving these needs, including a close and effective relationship with other Community Councils or Welfare Planning bodies.
3. *It should focus on the needs of school children* rather than on the operation of individual agency programs and should undertake to coordinate efforts to meet those needs as effectively as possible.
4. *It should have a democratic base with responsibility resting in a delegate body designated by autonomous groups, plus members at large* chosen to provide broad representation of all community interests.
 The delegate body should consist of official delegates from health, educational and related agencies and institutions; professional health organizations; civic groups with demonstrated interest in health; and members-at-large who are broadly representative of the community.
5. *It should have no administrative authority over participating agencies or organizations* but should strive to achieve its purpose through group discussion and education.
6. *Its members should share responsibility and credit for planning and should also share for accomplishment,* without domination by any groups, whether constituent organization, fund-raising groups or national agencies.
7. *Its decisions and action should be based upon facts obtained through objective, accurate and comprehensive research* into the nature of needs of people and the most effective means of serving them.
8. *Its program should be primarily one of coordinating and planning* rather than the direct operation of services for people. Certain common services for agencies and the community may be operated, however, when its member agencies agree that these services can be best done by united effort rather than by individual agency efforts. Certain short time

demonstration projects may also be carried on by agreement of member agencies.

9. *It should emphasize long-range programs* with specified short-term goals, which can be carried to successful conclusion.
10. *It should develop effective channels of communication and opportunities for producing interaction with statewide and nationwide planning groups.*
11. *It should concern itself with adequate financing of health and social welfare services for the school age child, whether from governmental or voluntary sources.*
12. It should have a staff qualified to execute the work program adopted by its *members and a budget adequate for that purpose.*[5]

2. The Health Council of Clinton County, Ohio, began its work by seeking the needs of their population through a survey. Through committees and by consulting specialists they found the following needs, the answer to which has become the program of the Council for several years to come:

Too many babies are miscarried or born dead.
Preschool children are not protected against diphtheria, tetanus, whooping cough, smallpox or typhoid.
Only 60 percent of school children are protected against smallpox and diphtheria.
School children lack dental and medical examinations.
Many families do not drink pasteurized milk.
Wells, cisterns and springs could easily become contaminated.
The surface privy is the principal means of sewage disposal.
Undulant fever is an immediate problem.
Tuberculosis cases are not found early enough.
Cancer strikes heavily.
There are 643 persons who have recovered from typhoid, which suggests the likelihood of carriers present.
Rheumatic fever has claimed 234 victims.
Heart disease and diabetes are high.
Accidents and fires take a heavy toll in time and life.[6]

[5] Reproduced with permission of W. B. Prothro, M.D., Public Health Director, and adapted from the Conference for Health Council Work, May 1955, Grand Rapids, Michigan.

[6] Clinton County Health Council, "Local Leadership in Health," *Journal of the American Medical Association,* November 4, 1950.

3. From Hempstead, N.Y., the following achievements of the Council are reported:

1. An environmental survey of our seven school plants and certain follow-up physical improvements
2. The addition of a teacher of physical education in the elementary schools
3. Freeing of another teacher for one-half physical education work in the elementary schools
4. Increase in elementary school nursing service from one and a half to two full time persons
5. Better coordination of health and physical education and health service activities
6. Establishment of a health service fund
7. Improved coordination and public relations community wise
8. A complete lighting survey of all school plants

Plans for immediate future include:

1. Provision for a more complete medical examination at certain grade levels
2. Extension and improvement of playground and playfield areas
3. Addition of a second nurse at the high school level
4. Improvement of classroom lighting in all schools[7]

4. A Council in action presents its program.

An example of a school health council that is studying and dealing with health problems in a democratic and practical way is that of the Vallejo City Elementary Schools.

It has met regularly once a month since its inception three years ago. Its personnel, which has a wide representation within the school system, includes the school physician, as chairman, the director of elementary education, the supervising school nurse, and one representative (either a principal or teacher) from each of the 14 elementary schools. A committee representing the secondary schools also meets monthly, both groups working closely together whenever the need arises.

The Elementary School Health Council is concerned with the health program from nursery school level through the sixth grade. Its functions, therefore, are many and varied. As set up by the group they are to:

1. Study health needs of the Vallejo elementary schools in the light of the most modern thinking;

[7] W. Amos Kincaid, "Why a School Health Council?" *Ideas,* 1948–1949, p. 1.

2. Advise the director of school health regarding the conclusions of the committee with recommendations on the implementation of these conclusions;
3. Carry back to the administrators and faculty of their own schools the findings and recommendations of this council;
4. Assist in every way possible the growth of health interest and health consciousness, in its broadest sense, within their individual schools;
5. Assist the director of school health in formulating recommendations for the ensuing academic year, these recommendations to be incorporated in the annual report of the Board of Education.

The democratic procedure and way of working of this health council have been very effective. Not only were health problems brought from the individual schools for consideration, but the school system as a whole benefited from the findings and study done by the group under the very able guidance of the school physician. Some of the subjects and activities carried on during the last school year included:

1. Study of health legislation
2. In-service education for teachers
3. Health recommendations for teachers; e.g., recommendations that all school personnel have chest X-rays each year (made possible by the Tuberculosis Association)
4. Adaptation of school schedules to meet the needs and capacities of children
5. Study and revision of pupils' health records
6. Consideration by teachers of the effect of heat, light and voice
7. Study of methods of "screening" children who have deviations from the normal
8. Consideration of school lunches and food sold to children outside of school
9. Discussions of use and value of rat feeding projects in teaching nutrition in the classroom
10. Coordination with other agencies and organizations such as the parent-teacher association, tuberculosis association, county health department, and the State Department of Public Health[8]

5. In Minneapolis, Minn., committees were organized from the Council on health guidance and appraisal, health of school personnel,

[8] Dorothy Spurling and Vista Stockwell, "A School Council in Action," *Journal of School Health*, February, 1948, p. 50.

school safety, mental health, health and physical education curriculum, civil defense, fluoridation, and others. The business of the council involved such projects as the organization of a chest X-ray program, a mental health forum, special-service teacher pilot study, community dental clinics, summer playground program, a program for blind students, and others.

6. One of the most famous of the school community councils, that of Nassau County, N.Y., has an executive committee consisting of 13 counselors and 7 supplementary committees as follows: school physicians, dental health, school health program, handicapped, school health service, school health environment, and school health instruction.

During the first year of its organization, the council in Worthington, Ohio (1) issued publications to parents on rheumatic fever, scarlet fever, diphtheria immunization, preschool physical examinations, and poliomyelitis, (2) established a program of communicable disease control, (3) established a program of safety and emergency control, (4) examined the sanitary conditions in all school and community eating establishments, (5) obtained restricted parking areas on thoroughfares near the school, (6) encouraged the establishment of a course in health instruction for senior high school boys and girls.

THE CHAIRMAN OF THE COUNCIL

The chairman will bear the lion's share of responsibility for the success of the council during his term of office. He will probably be selected because of his interest in child health and health education. The chairman should have a knowledge of school and community organization, information about community resources, and an ability to get along with people in an effective, cooperative manner. Through his own efforts and the work of his appointed committee chairman, he should discharge the following responsibilities:

1. Stimulate the work of the health council.
2. Be the agent for the health council on appropriate projects.
3. Confer and study with teachers on matters pertaining to curriculum development in health instruction.
4. Represent the health interests of the school before the administration and board as improvements are sought.
5. Arrange school and public meetings devoted to health problems.

6. Engage in such study of problems or research as may be needed to improve the local program.
7. Arrange for whatever all-school surveys or studies may be made upon the request of the health council or any other authoritative body.
8. Extend helpful overall supervision of the health implications in the entire school program and secure close cooperative working relationships among all the interests concerned with school health.

THE SCHOOL ADMINISTRATOR

Basic to the work of any council or program is a sympathetic, interested, informed, and willing school administrator. Nothing can go on successfully in a school without his support and consent, and, in turn, the administrator knows that he must accept the final responsibility for everything that does go on. Hence many principals are cautious about the development of school health education until they are sure of the merits of the program.

The responsibilities of the school administrator in school health education have been the subject of considerable investigation. The National Conference for Cooperation in Health Education determined his duties to be somewhat as follows:

1. To direct and coordinate all phases of the school health program under the school's jurisdiction
2. To secure adequate funds for the health program administered by the school, and to cooperate with the health department in obtaining and budgeting funds for medical and nursing services which may be administered by that department
3. To recommend for appointment physicians and nurses employed by the school and to assign their functions
4. To make provision for in-service training of school personnel
5. To give leadership and guidance in establishing and maintaining community understanding of, and relationships to, the school health program
6. To encourage cooperative and democratic efforts among school-employed personnel, parents, and others in the community in the operation of the school health service program, and to help in establishing good working relationships between school personnel and health department personnel, if the latter are responsible for medical and nursing service

7. To assume administrative responsibility for providing and maintaining a safe and healthful school environment
8. To set up a procedure for the continuous appraisal of the school health program
9. To establish sound understanding and sympathetic relationships between the school health program and the health and educational programs of other agencies in the community
10. To provide for an organized program of parent participation in the school health program, and of parent education in the field of health
11. To develop understanding of the extent of the authority granted in existing laws regarding school health procedures and to make an effort to have these laws improved where necessary
12. To provide for changes or adaptations in the school program for children with special needs
13. To ensure the establishment and efficient use of an adequate system of health record keeping
14. To cooperate in setting up a program for controlling communicable diseases and accidents
15. To establish an adequate health service for school personnel
16. In planning the construction of a new school plant or the remodeling of an old one, to use the latest competent advice so as to recommend the type of plant, including grounds and playgrounds which will be in conformity with the best modern standards in sanitation, ventilation and lighting, safety features, and other conditions conducive to healthful living
17. To provide a teaching staff which radiates good health, and a healthy custodial and lunchroom staff[9]

These are his basic responsibilities. He may allocate some of them to other people but in the end the success or failure of the enterprise comes back to the principal or superintendent. School health education can develop just as far and no farther than is agreed to by the principal administrative officer of the school.

THE MEDICAL ADVISER

In an ideally developed program of school health education, a physician serving the school is a requisite. Much of the success of the health activities program revolves around him and his services. Originally

[9] Adapted from *The School Administrator, Physician, and Nurse in the School Health Program,* National Conference for Cooperation in Health Education, School Health Monograph No. 13 of the Metropolitan Life Insurance Co., 1944.

brought into schools to examine for hearing and vision, the physician has now had the scope of his work enlarged to assure him a key position in the entire educational program. His duties extend far beyond the routine and hasty examination of children and the compilation of statistics. He has become in every sense a member of the school staff participating uniquely in the development of school health programs. His potential duties have been described by the American Academy of Pediatrics:

> The *school physician* should function as a medical adviser as well as a specialist employed for a professional job. The physician in the school, however, is primarily a health adviser rather than a source of medical care. To community health agencies and physicians, he has the role of liaison with schools. He advises the school staff on medical matters. An important function is to analyze with the nurse the information she has gathered about pupils and their families, and to prepare her for leadership in securing follow-up. He also advises parents and children as to the facilities which exist for solving their medical problems. However, he should not replace or substitute for the child's own physician or other community health service. In the medical examination his primary aim is toward effective counsel rather than in specifically stated diagnosis or in treatment. The school physician should not give treatment except of first aid and emergency type. He should discover the child who needs medical attention and attempt to make a correct evaluation. Using the knowledge gained by his evaluation, he can, without discussing specific diagnosis, guide the parents to their private physician or other community health service.
>
> The school physician can aid and supplement the private physician in his care of the child. His more intimate knowledge of the school environment and his greater opportunity to suggest and recommend needed educational and recreational modifications are of help to both private physicians and parents. He should have a good knowledge of available community resources; thus he can tell the family and the private physician what these resources are, and when they need them. The school physician also has an opportunity as part of the organization staff to act as counselor on health curriculum content, health instruction and environmental sanitation.[10]

There are other opportunities, of course. Among them the physician can contribute his professional skill to the evaluation of all materials used in the health instruction program; serve as a resource person in

[10] A Report of the Committee on School Health, American Academy of Pediatrics, *School Health Policies*, Evanston, Ill., XXXIII, No. 1 (January, 1954), 76–77.

health classes; participate actively in the program of the school-community health council; aid in the development of in-service training programs for teachers in relation to their function in school health programs; and supervise the conditions under which competitive athletics are played and the conditions under which food is served at school.

The unique position of a physician in an educational program has not been easy to establish. Many years of experience and much careful thought have gone into the evolution of his present status. The idea of having a physician serve the school was not readily acceptable to medical groups, and educators were prone to misunderstand his function and use him in a shortsighted way. The cooperation of medicine through physicians, nurses, dentists, and psychiatrists is today welcome and necessary in the better educational programs, and its success depends largely upon the acquiescence to the following policies:

1. Medical services should be paid for and not expected as a contribution from community physicians.
2. Teachers must understand and function within the principle of privileged communication. Information from physicians about pupils must be held in confidence and used for professional purposes only.
3. The physician serving the school should, with the school administrator, inform local medical and dental societies of the nature of the school problem and program and utilize the judgment and resources of those groups.
4. School medical personnel should be members of the local medical and dental societies.
5. Parents should be advised and encouraged to have medical examinations performed by family physicians, and the record of findings should be transmitted to the school.
6. Reparative treatment should be done by family physicians. In instances where it is not possible to make such arrangements the school authorities should arrange to have the work done through public agencies and clinics.
7. The medical adviser should obtain all needed data on a child from the family physician's examination, but in instances where these data are incomplete or the examination is of a type not helpful to the school program, the medical adviser should make the examination as a part of the school program.

8. A great deal of the medical adviser's time could well be spent discussing with parents at school the health needs and development of their children. The adviser should demonstrate what good medical service is and assist parents in the development of their own conception of the value and nature of adequate medical care.

The Second National Conference on Physicians and Schools agreed on certain conditions which, if acknowledged, will enhance the work of the physician who serves the schools. These are as follows:

The school physician should be a doctor of medicine officially designated by an appropriate authority to render specified services in one or more schools on a full or part time basis.

The school physician will be in a position to make his optimum contribution to educational goals under the following conditions:

a. When he has responsibility in his field as a recognized member of the administrative staff of the school and is included in meetings of the faculty and the health council as well as staff meetings at the administrative level.
b. When he receives compensation commensurate with his training and experience and the responsibility of his position.
c. When he is given an appropriate place in the in-service education of teachers in health service functions, and as a consultant in the preparation of curricular materials in the field of health.

The school physician can best gain professional status and command the respect of his medical and educational colleagues under the following conditions:

a. When there is mutual understanding and agreement among both physicians and educators on the functions of the school physician.
b. When he properly coordinates his program with existing patterns of medical and educational practice.
c. When physicians of the highest quality with the training and experience necessary to competently perform the many diverse public health functions required are selected as school physicians.
d. When close cooperation with the private physicians in a community prevents misunderstandings from arising in school-family physician relationships.
e. When school health services are made educational experiences for pupils, parents and teachers.
f. When local medical societies devote some of their scientific programs to the field of school health as presented by the physician serving the school.

The work of the school physician can be performed most effectively when:

a. Adequate rooms for carrying on health services in privacy and dignity are provided.
b. Teachers, nurses or technicians perform those phases of health services they can be prepared to do effectively, reserving for the physician those functions which only a medical advisor is qualified to do.[11]

It is probable that less than one-quarter of all the schools in the nation have the services of a physician who is an employee of the board of education. Thousands of rural and village schools rely upon the local public health officer for whatever service they get. Still other thousands have no medical adviser, no physician serving the school at any time. Some state laws require the local health officer to serve the school if no school physician is employed. In such instances the school authorities should (1) establish a school health committee or council to (2) undertake as many of the proposed activities for such councils as possible with the limited medical help and (3) institute proceedings early to obtain some form of assistance from local physicians or medical officials. With or without a physician as medical adviser to the school, the need remains the same. Where no medical aid exists, the school personnel should nevertheless undertake as much of the work as it can.

THE NURSE

One of the major steps toward the establishment of a complete and practical school health program is to employ a nurse. She has become of central importance in the operation of today's educational programs.

In one of the most far-reaching studies of the functions of the nurse in school health education, the Committee on School Nurse Policies and Practices of the American School Health Association published in January, 1956, a distinctive and helpful report on recommended policy and practice.[12]

This report makes clear the functions which the nurse performs in the areas of health appraisal, emergency care, communicable disease control, nutritional programs, guidance and counseling, exclusion and readmittance of pupils, care and educational development of excep-

[11] Conference Report, 1949, American Medical Association, Chicago, Ill.

[12] The American School Health Association. "Recommended Policies and Practices for School Nursing," *Journal of School Health*, XXVI, No. 1 (January, 1956), 13.

tional children, home visitations, cooperative programs with community agencies, record keeping, consultation and sometimes teaching in health instruction, and counsel to the school administration on matters relating to the health aspects of the school environment.

The Metropolitan School Study Council adds this in describing the role of the nurse:

> . . . the nurse has one of the most important roles. It is through her ingenuity, her ability to organize her own work, to work as a member of the team, and to create a pleasant and cordial atmosphere in the health room that the following are accomplished: parents and teachers are notified in advance of the time of the health examinations; records and reports with up-to-date information are ready for the physician; as much privacy as possible is provided; each student feels he is receiving individual attention; each parent is helped to see the importance of corrections that may be necessary; parents as well as children learn the purpose of an annual health examination. After the health examination the nurse makes a lasting contribution to the health of children in her successful follow-up of corrections necessary.[13]

Another report, prepared by the Joint Committee on Health Problems in Education, adds constructively to the others in amplifying the specific opportunities of the nurse in the program; this report should be consulted.[14]

In summary of the nurse's functions, the Committee of the American School Health Association gives the following general responsibilities of the nurse:

1. Gives leadership and guidance in the development of a total school health program.
2. Participates in the formulation of policies, standards, and objectives of a school health program.
3. Serves as a consultant to the administrator, parents, and teachers in regard to the health needs of children.

[13] From 29 *Tested Practices in School Health Services,* New York, Metropolitan School Study Council, an affiliate of the Institute of Administrative Research, 1956, p. 7.

[14] Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, Cooperating Agency, the Education Committee of the School Nursing Section of the National Organization for Public Health Nursing (now a part of the National League for Nursing), *The Nurse in the School,* Washington, D.C., National Education Association (1201 Sixteenth St., N.W.), or Chicago, American Medical Association (535 N. Dearborn St.), 1955, p. 29.

4. Assists in planning the budget for health services.
5. Serves as a member of the school health council.
6. Acquaints the administration and other school personnel with health problems in the school, home, and community.
7. Participates in the coordination of the school program with the total health program of the school and community.
8. Assists in planning and conducting in-service health education for school personnel.
9. Is an active participating member in faculty and parents' meetings.
10. Is an active participating member in school building meetings.[15]

THE CLASSROOM TEACHER

Closely associated with the nurse in the health program of an elementary school is the classroom or homeroom teacher. Their relationship has been described by the Joint Committee on Health Problems as:

> In terms of school administration the relationship between the teacher and the nurse is a horizontal one. They are fellow workers, sharing a mutual interest in the pupil, but each has special abilities to use in helping the child reach his health objectives. For some health activities (for example, health service) the nurse may carry the chief responsibility and the teacher may assist her; in other instances (such as health teaching) the teacher may take the main responsibility and the nurse assist him. If the relationship is to be a good one, much depends on the consistency with which each of these individuals keeps the other informed of what each is doing. The teacher-nurse conference is a good method of clarifying this relationship and also the division of responsibility.[16]

Actually the teacher is the central figure in any program of school health education. She conducts the largest share of whatever teaching goes on. She sees the developing child for more hours per day than anyone else and thus has the best chance to observe the variations from normal as they occur. She knows more about the children than anyone in school and has in most instances the greatest influence on their behavior. Health programs can stand or fall in terms of her interest and cooperation.

In terms of the school health service, the teacher's twofold objective is recognized when she is informed of the findings of the school medical and

[15] "Recommended Policies and Practices for School Nursing," *op. cit.*, p. 16.
[16] *The Nurse in School, op. cit.*, p. 18.

nursing staffs so that she can use them in the instruction and guidance of students with health problems. In turn she can give valuable assistance to the physician and nurse in reaching their objectives. She is in a strategic position to observe changes in health status as they occur, and to give the continuous supervision necessary to meet the child's health needs as outlined by the physician. She is able also to screen for individual variations and thus has an opportunity to make of these educational experiences.

Most important of all, the teacher is able to supply the physician and the nurse with clues to guide them in doing their part in the health education of the child. She sees the individual differences of each student against a background of the behavior and learning ability to be expected from the group of which the student is a part. To her the discovery of myopic vision, for example, explains why the pendulum of learning ability of a particular child describes a smaller arc than the one which sets the tempo for the group, and to her its treatment is not so much the mechanical setting right of one thing that is wrong as it is an adjustment favorable for the child as a whole. The teacher who is sensitive to those relationships can help the physician and nurse to see them too, so that all three can work together for the individual child who is the direct object, stated or implied, of every process connected with public education in America.[17]

The Research Division of the National Education Association summarizes and specifies these functions to include innumerable responsibilities for the teacher in connection with the following:

1. Cooperative overall planning about the health needs of children
2. Grasping opportunities for health teaching
3. Helping each child to develop and maintain best possible health
4. Making the school a safe and healthful place
5. Using school health services and resources
6. Using community health services and resources
7. Cooperating with the home in promoting and maintaining good health
8. Developing relationships among the school staff, parents, children, and community leaders which will contribute to the mental and emotional stability of children[18]

But, as is the case with any other worker in the school health program, the classroom teacher needs help from others to make her work most effective. The kind of help she needs has been described as:

[17] Adopted from *The School Health Program*, Monograph No. 12, New York, Metropolitan Life Insurance Co., 1952, p. 7.

[18] National Education Association, *"The Function and Education of the Elementary School Teacher in the School Health Program,"* December, 1948.

1. General interpretative or advisory help regarding health and welfare needs of all pupils
2. Specific help to assist children who present special health, behavior, or welfare problems or needs which interfere with the pupil's school adjustment and/or which influence adversely the class group activities, units, and progress
3. Understanding and insight into causative factors, forces, and movements in and outside of school which affect the child's adjustment in school
4. Suggestions of ways the teacher can observe, detect, and refer children who need further help
5. Understanding of services and program which concern pupil out-of-school activities
6. Help in preventing certain types of behavior problems[19]

NURSE'S AIDES

Some school systems have been using nurse's aides to assist in the work of both teachers and nurses. These are generally women of about a high school education, mature, and willing to work with children under the direction of the nurse. The functions of the nurse's aide are largely in the field of first aid. But they also include such duties as (1) administering to the ill, such as making them comfortable on the cot and taking temperatures; (2) application of hot water bottles and ice-caps; (3) contacting parents when a pupil is ill or has been in an accident and needs to be sent home; (4) keeping the clinic log; (5) singing pupils in and out of the clinic, assisting in carrying out routine screening procedures (such as vision, height, and weight), and recording such data on the pupil's medical nursing records; (6) taking charge of clinic supplies and linens; (7) assuming the responsibility of keeping the clinic room clean and neat; (8) assisting in the clinic aide program and maintaining files of health materials for student use; (9) taking responsibility for student insurance programs; (10) accompanying school groups in out-of-school hours and scheduling students selected for screening tests.[20]

[19] Excerpts from *Revised Evaluation Report on Special Service Teacher Pilot Study*, Minneapolis Public Schools, Minneapolis, Minn., p. 8.

[20] Margaret A. Bauer, R.N., "Adult and Student Aides as Part of School Health Services in Secondary Schools," *Journal of School Health*, XXVII, No. 4 (April, 1957), 107; and Mary A. Thompson, "A Nurse's-Aide Program in Secondary Schools," *Journal of School Health*, XXVII, No. 3 (March, 1957), 75.

SPECIAL SERVICE TEACHERS

Some localities, notably Minneapolis, Minn., have been experimenting with a new concept of a "special service teacher." It is possible that in many communities there may be a shortage of school nurses, school psychologists, guidance personnel, visiting teachers, and others whose functions involve home visitation and teacher counseling. Frequently it is desirable for two or three school people to visit the parents to obtain information on a child. The visiting teacher, the nurse, and the classroom teacher might all have need for such a conference. The Minneapolis experimental program delegates one person, a specially prepared and informed teacher (who may also have a nurse's preparation) to represent the school in working with the family. The duties of this person are described as:

1. Makes home calls and interviews parents regarding child's behavior at school.
2. Counsels with individuals and groups regarding health needs and problems.
3. Assists teachers in helping pupils gain adjustment in school-home problems which affect classroom behavior and ability to learn.
4. Makes contact with and secures help from school resources—counselors, consultants in school social work, special education department (speech, hearing, sight-saving), child study department, chief school nurse, dental hygienist, etc.
5. Makes contact and secures help from community health and welfare agencies.[21]

The pilot study in Minneapolis was successful, and special service teachers now supplement the regular staff of physicians, nurses, and hygienists.

THE PHYSICAL EDUCATION TEACHER

The relation of physical education personnel to school health activities should be one of complete cooperation and interested participation. So closely allied are the health activities of the school with the conduct of a modern program of physical education that frequently the physical

[21] Excerpts from *Revised Evaluation Report on Special Service Teacher Pilot Study, op. cit.*, pp. 8, 9, 10.

education teacher is chairman of the health council, and the physical education program becomes the central means by which the health of students is favorably affected. The discussion of the interrelationships of physical education with the rest of the health education program is found in Chapter 17.

THE CUSTODIAN

It is recognized that the school custodian is an important person in the school system. He not only carries a heavy responsibility in operating and protecting valuable school buildings. grounds, and equipment, but he is also a vital factor in promoting school health and safety. The school custodian promotes the health and comfort of pupils by:

1. Effective operation of heating and ventilating equipment
2. Keeping floors, blinds, shades and furniture free of dust
3. Cleaning walls, ceilings, windows, and artificial lighting fixtures to secure the best possible illumination
4. Making certain that water pressure is kept up so that at no time will back siphonage occur to contaminate the water supply
5. Providing tempered water on tap, liquid or powdered soap, and paper towels on hand at all times for hand washing
6. Keeping every part of the building clean and sanitary at all times

The school custodian promotes pupil safety by:

1. Systematically checking all playground equipment and keeping it in good repair
2. Removing broken glass and other playground hazards
3. Maintaining floors so that they will not be slippery
4. Keeping all required exit doors and hardware in good operating condition
5. Keeping all lines of travel to required exits free of obstacles
6. Inspecting safety devices on boilers and pressure vessels to make sure they are always in good operating condition
7. Periodically checking fire alarm systems and fire fighting equipment
8. Assisting in the supervision of fire exit drills and traffic patrol activities
9. Carrying on a continuous program of fire prevention

The work of the school custodian is no small task. In a large measure, the custodian, as well as the teacher, promotes appreciation for orderliness and cleanliness and promotes good health practices by pupils. Because of his close connection with factors in school health and safety, the school custodian should, obviously, be a member of the health committee. His under-

standing and appreciation of his responsibilities and his competence in doing work have a direct bearing on pupil health and safety.[22]

OTHER SPECIALISTS

There are other professional workers who have a share in a fully developed school health program. The work of a dental hygienist and a dentist has been described in a previous chapter, as has that of the psychologist. The nutritionist functions importantly in teaching and counseling on dietary problems and in supervising the school feeding program. The speech supervisor renders important psychological service in straightening out emotional problems associated with speech variants. The sanitary engineer, the architect, the acoustical specialist, and the lighting engineer are all of great value in planning new buildings or in remodeling old ones.

Each of these has a niche to fill. Each must fill it cooperatively and in relation to the best interests of children. A completely integrated program requires their services but wants them in relation to the whole, not as independent specialists operating for other than the educational purposes.

LEGAL ASPECTS

Authorization for any phase of school health and physical education must be established in law. Public money may not be expended for appropriations to local systems meeting standards established by the government. In the fields of vocational agriculture, special education for the handicapped, trades and industries, and the school lunch, the appropriations from Washington are made on that basis. There seems to be something less than unanimous approval for such arrangements but, in the main, the results are good. Communities have profited from the programs already established.

Congress is constantly asked to widen the scope of federal participation in school health programs. Some two dozen bills bearing upon the health of the child in school are usually presented in each regular session. So far Congress has been very reluctant to approve bills which would withdraw from the state any of its prerogatives in determining the kind of program it wishes. In the evolving social security program,

[22] Fresno, Calif., Board of Education, Bulletin, 1951.

subsidies are increasingly made for child health, maternal welfare, disease control, and numerous other health problems. These funds have been administered by the Children's Bureau and the United States Public Health Service and given to state departments of health for disposition in the states.

The funds have been used, in part, for school and public health education through the appointment of supervisors who have served communities. Several have been assigned to state departments of education to correlate better the health interests with the on-going educational program of the state. If the government in the future extends greater equalization aid to state educational programs, provisions will undoubtedly be made for the extension of health education in areas not now well developed. There are two principal ways in which this can be done—by equalization funds paid directly to communities through their state departments of education or by the extension of supervisory service to communities to aid local groups in developing a program with the resources at hand. The latter is the less expensive of the two and retains a greater measure of local autonomy in the conception and development of local programs.

There are many who would resist the efforts of Congress to give the executive branch of the government, through the Office of Education, final authority in the development of the *curriculum*. Wartime experience, when schools and colleges had sometimes to teach according to set patterns, following set procedures and including only set material, has given many people sufficient impression of the undesirability of extending government control in either health education or physical education. The handbooks and manuals in health and in physical education used by the services were difficult to adapt locally and allowed insufficiently for local modifications. Local autonomy in the development of instructional materials and administration of a curriculum is to be preferred.

State Laws and Standards

The state is the principal controlling agent in education in the United States. State legislatures are responsible for the passage of laws and appropriation of money in support of public education. The distributing agency which the state uses for this purpose is the state department of public instruction, or of education, as the case may be. In the oper-

ation of school health education that agency is supplemented in its work by the state department of health. The two work jointly in the development of school health education, frequently sharing personnel and extending joint services to communities in need of aid.

Such work as is done on the state level, emanating from state departments of health or education, is directed in most of the states by a supervisory staff in school health and physical education. These supervisors and their assistants serve a variety of purposes, all aimed at the development of programs in school health and physical education. They establish minimum standards for program development, set standards for the training and certification of teachers and others who serve in school programs, publish state courses of study for suggested use in communities, develop in-service improvement programs for personnel, give direct aid to communities in program development, and perform numberless other functions related to the promotion of the fields. The state laws require that such standards for program and personnel be established by state departments and be accepted by the schools of the state. Thus it may well be said that the quality and quantity of local programs will depend upon the leadership exerted at the state level.

There are contrasting ways in which the framework, within which this leadership can work, is set. Some states[23] have extended laws specifying in great detail the character of the program which is expected. These laws indicate how many minutes a week must be devoted to health instruction, the frequency with which examinations are to be held, which types of immunization are mandatory and which optional, and in many other ways describe an optimal program in law. Other states[24] rely more upon state standards. The law will briefly declare that there must or may be programs of health and physical education in the schools of the state and vest the authority for developing the details in the state department of education. This department then develops a program of standards which is accepted by local schools wishing to become accredited. Such a plan allows for greater flexibility in the improvement of the minimum level of programs in that standards may be altered by the official state agency without raising the complicated problem of legislative action. Furthermore, the acceptance of standards is, to many school systems, a more palat-

[23] E.g., Pennsylvania, Florida, Illinois.
[24] E.g., Ohio, Wisconsin.

able process than adherence to law. Whether the state operates principally by law or by standards the personnel of a local system will want to know the full detail of what is expected of them and what the mandated and permitted features are in school health education in their state. There being no standard school law used in all states, a study must be made locally to determine the scope of the law or standards.

It is clear that the trend is toward centralizing the responsibility for the supervision of programs in state departments. A recent bulletin from the United States Office of Education indicates the following:

> There is a definite trend in State departments of education toward establishing administrative responsibility for all phases of school health, physical education and recreation in one unit or division. This trend is also shown by board rulings and laws making health education, physical education, recreation, safety education, school lunches, and education for handicapped and exceptional children the responsibility of the director of the division of health and physical education. In some instances, the titles of the directors of the divisions have been changed to indicate the range of responsibility.
>
> There is also a trend toward the establishment of specific administrative or instructional requirements through codes, standards, or rules and regulations. . . .
>
> A third trend is toward the establishment of "Cooperative Arrangements" between State departments of health and education in the various States.[25]

Examples of State Laws and Standards[26]

HEALTH EXAMINATIONS

There is local option in the matter of health examinations in California—boards of education are permitted to do as they wish. In Pennsylvania examinations are required regularly and costs are subsidized by the state through the health departments. Colorado requires that all teachers *must* have an examination before teaching, and Ohio gives boards the *right* to ask for an examination as a condition of employment. In nearly every state provision is made for the "conscientious objector"; i.e., parents with religious or other conscience scruples which make them unwilling to have the health of their children su-

[25] *State Administration of School Health, Physical Education and Recreation*, U.S. Office of Education, Bulletin No. 13. U.S. Government Printing Office, 1947, p. 4.

[26] For a fuller discussion of state laws and standards see Jessie Helen Haag, *The School Health Program*, New York, Holt, 1958.

pervised in school may withdraw their children from the program of examinations.

In Massachusetts the Department of Public Health prescribes and establishes regulations relative to the physical examination of school children. These regulations (1952) include the following:

The school committee or the board of health shall provide the services of a school physician to carry out health appraisals on such children as do not have this service performed by the family physician. He shall carry on other responsibilities of the school health program including (1) interpretation of the child's health situation to the school personnel, (2) assistance to the teacher and nurse in meeting the health needs of the child insofar as this is possible in the school environment, and (3) interpretation of the school health program to the family physician and parents. . . .

The school committee or board of health shall cause every child in the public schools to be separately and carefully examined by a physician duly registered in Massachusetts within six months before entrance and at intervals of either three or four years thereafter. . . .

The school committee or the board of health shall cause children in the public schools to be separately and carefully examined by a duly registered physician under the following circumstances:

1. Children returning after an absence from school of five consecutive school days or more due to illness
2. Children referred because of frequent absences due to unexplained illnesses
3. Children referred because of known physical defects that require repeated appraisal
4. Children referred from teacher-nurse conferences because the child is not making expected progress in school or because of signs of illness noted by the teacher or nurse
5. Children under sixteen and over fourteen years of age requesting employment certificates
6. Children planning to participate in competitive athletics annually, previous to such participation . . .

The school committee or board of health shall cause the vision and hearing of each child in the public schools to be tested in the first grade and every second year thereafter. . . .

The health appraisal shall be done with such care and detail as to command medical respect and be a desirable educational experience for the child. . . .

Disabilities and defects found on health appraisal of an individual child shall be brought to the attention of the family. The school or health department shall encourage the family to take the child with physical defects to the family physician or other source of care. . . .[27]

In the matter of these health appraisals one can see all the variations of laws and standards from openly permissive to strictly required.

DISEASE CONTROL

North Carolina requires immunization against whooping cough and smallpox before the age of one year, and schools are not permitted to admit children who are not immunized. Ohio requires immunization against smallpox, poliomyelitis, diphtheria, whooping cough, and tetanus as a condition of entrance, but one or two other states expressly forbid boards of education to impose such regulations. Most states allow either boards of education or boards of health to exclude children who have or were exposed to communicable disease, and boards of health, almost universally, may close schools in time of epidemics.

SANITATION OF SCHOOL PLANT

There is wide divergence in the area of sanitation. Local schools are subject to the observance of a variety of rules, regulations, standards, and laws emanating from boards of education and health, city councils, county commissioners, and legislatures. The standards of the fire marshal, state architect, smoke inspector, and sanitary engineer must all be met, and local architects must be familiar with a vast detail of sanitary, safety, and building specifications.

EMPLOYMENT OF PERSONNEL

Michigan, Pennsylvania, Indiana, and most other states allow boards of education to employ physicians and nurses for school health work. Pennsylvania law stipulates what physicians shall do and establishes a minimum fee for their services. New Jersey stipulates what school nurses shall do. Several states have arrangements whereby local health officers may, or must, supervise the health of school children if boards of education have not employed their own physician.

[27] From *Regulations for Physical Examination of School Children in Massachusetts,* Department of Public Health bulletin, 1951.

HEALTH INSTRUCTION

Virtually all states emphasize the teaching of health within their laws and standards for health and physical education. There is great variation in the stipulations concerning the years it shall be taught and the time given to it. Special laws requiring the teaching of temperance and in the use of tobacco and narcotics are to be found in some states. Idaho provides for a state supervisor of narcotic education and appropriates $25,000 every two years for narcotic education work. Two full semesters of health instruction are recommended for high schools in Indiana, and Louisiana authorizes a half unit of credit for such instruction. Massachusetts, on the other hand, has no state standards but complete local option. New York State has mandatory laws requiring instruction in elementary schools.

HEALTH OF EMPLOYEES

Maine requires all employees to file a physician's certificate annually showing the employee to be free of communicable disease. The costs of health examinations are borne by the state department of education. Maryland also requires such an annual certificate. The majority of states, however, have such statutes.

The foregoing are but a few of the many kinds of laws and standards which bear upon school health and physical education. Standard practice is only emerging. There are several "backward" states which have not yet given attention to health needs of school children and there are a few which have provided most amply for it. Such variations are, in the main, desirable because they reflect the judgments of the various state groups as they see and solve problems of their relatively homogeneous groups.

Local Autonomy

The system we have in American education gives virtual autonomy to the community in determining the kind and quality of educational program it shall have. State departments of education lead, encourage, illuminate, and enforce minimum standards. Departments of health can enforce state laws representing minimum standards of performance in sanitation or safety. As we have seen, there is, so far, a faint relationship between the federal government and the community. But by and large the program in school health and physical education is a

local matter and dependent almost wholly upon the willingness and ability of local administrators and teachers. To offer health instruction well, poorly, or not at all is in most states a local matter. To employ a physician, to organize special education for the handicapped, to install adequate lighting and sanitary facilities—these are local problems mainly. *School health and physical education is well or poorly done according to the extent to which local school, health, and municipal authorities exercise their prerogatives under the law.* The responsibility falls heaviest upon the local superintendent of schools. The quality of the health program in the school reflects his professional attitude toward and skill in developing adequate programs for the health of the children of his community. Others share with him, but leadership can and should come from the chief administrator as he works within the framework of the laws and standards which his state and board have established.

It must be constantly borne in mind by teachers and others that whatever is done in health education must be sanctioned by law or standard. Public schools may not spend money without legal provision for it. Curriculum developments must fall within state standards. The legal basis for health education can be restrictive, permissive, or mandatory. If restrictive, the law or the standard expressly forbids or restrains the school system from doing something. California law, for example, forbids schools from requiring vaccination for smallpox as a condition of entrance. Many laws forbid boards of education to require physical examinations of pupils whose parents are conscientious objectors in this respect and file their objection in writing. Some laws are permissive: boards may, if they wish, spend money on salaries for physicians; or they may, if they wish, pay transportation costs of field trips. Other laws are mandatory: they *require* fire drills, or immunization, or that teachers be free of tuberculosis before employment. Any development in health education should be checked against the legal structure of the state or the rules and regulations of the local board of education before being activated.

DISTRIBUTION OF COSTS

The development of school health education is not, at the moment, a costly enterprise compared with the rather modest cost of public health in the United States today. It is estimated that the latter figure is $6.32

per person per year, whereas the average cost of school health education per pupil per year is roughly $2.70 (the cost for elementary health education is always larger than the program in the secondary school). These figures are based on data from 40 states, using the average daily attendance base rather than enrollment.[28]

It has been said many times that the American people will have the kind of medical care they are willing to pay for. The implications of all such sweeping statements must be examined to find the hidden danger. Surely in this one there is an implication of oversight of the specialist—the medically trained who, because of his experience, knows a great deal about the way medical care *can* be best organized to get the best results from money which is paid by the public. There is nothing virtuously democratic about overlooking the expert in medical organization for the sake of providing any kind of medical care which seems to meet popular fancy at the moment.

So it is with school health services and activities. Communities will have the activities they are willing to pay for. And yet, few activities related to the practice of medicine require the helpful hand of the expert more than does the development of these school services so needed by children. A community may, if it so pleases, cling to the ancient notion that the school is the place to train the mind and any effort to broaden its scope is foolish. If that point of view prevails there will be no health activities carried on and the toll in child health will be heavy. The community may believe, if it wishes, that *any* school health activity is an infringement upon the medical sphere and throws the school forthwith into the practice of medicine, in which it is professionally unprepared. Such a point of view prevails in many places and is developed in ignorance of enlightened medical and educational opinion. It also costs heavily in child health.

The public can be brought around to and is slowly developing the understanding that school health services and activities need *not* be infringements upon the medical province as long as they are guided by the enlightened principles of cooperative effort—as long as the experts from both medicine and education are allowed a voice in the policies. Allow the unguided voice of an uninformed public opinion or the prejudiced voice of a segment of either professional group to

[28] Bronson Price, *School Health Services*, U.S. Department of Health, Education and Welfare, Social Security Administration, Children's Bureau, 1957, p. 27.

predominate and school health programs will usually be missing entirely or be such that the ultimate beneficiary of them gathers little. There is room in today's schools for neither extreme view: the school health activities need not be organized as "state medicine" nor need they be absent altogether for fear of infringement. The public will have, eventually, about the kind it wants, and the expert, the informed educator and physician, should take the leadership in forming up the program of the future.

Sources of Support

One of the very simple and yet potentially complex problems concerning school health programs is their financial support. Obviously, they must be paid for. It is out of the question to expect that they will be provided gratis by the medical, nursing, and other specializing personnel involved. It is rudimentary that the school organization must provide in its budget for the services and equipment which it uses in protecting and developing the health of the child. Whether such necessary funds actually come from the school tax money is another thing. In the last analysis it matters only that their expenditure be subject to the control of the school authorities. It is seldom wise to have two official agencies spending money within the school program. Crossed purposes, duplication, and waste frequently result. Whatever funds are used and spent for school health should be subject finally and irrevocably to the judgment of those in schools responsible for the program.

The problem becomes complex when one considers the numerous sources from which such funds may come. Not every dollar spent by schools has been raised by the local school tax. Some money has come from state and federal taxes and from more than one agency and bureau within the state and federal government. Some may have come from local, county, or state health funds. Some may have been provided by a nonofficial agency and *given* to the schools for some specific purpose. The following sources are apparent today.

FEDERAL ENACTMENTS

Congress has from time to time been asked to appropriate federal money for school health purposes. The School Lunch Law is a case in point: in a matching plan, states and communities are allowed to share

the support of a lunch program for children whose need can be demonstrated. Other proposals have requested federal subsidy for local physical examinations and immunization programs, although they have not yet become law. As many as 20 or 30 bills related in some way to school health and physical education are presented to Congress each session, and although few of them ever are passed, the trend seems to be toward federal subsidies for services or supervision.

STATE LAWS

Every state has some law pertaining to school health. Many states are rather fully provided with the legislation needed to operate a school health program in the community. Education equalization laws frequently provide money for employing health personnel, and other laws permit the community to spend its income on such programs and personnel as it deems wise. Some states have enacted legislation to provide money directly to communities for school health purposes.

BOARDS OF HEALTH

Funds may be, in certain states, transferred outright from boards of health to boards of education for the support of specified health activities. Or, more commonly, such activities may be financed by the board of health. This situation requires a high degree of cooperation for efficient administration when public health personnel render service in the school or when public health money is spent in the school. The quality of service should be no less than if it were contracted for from private physicians. School authorities should not expect good service if they ask the local health officer to visit the school, perform 50 examinations an hour, immunize all the first grade children who need immunization, and attend to any other necessities of the moment. Such services by colleagues in public welfare should be rendered well or not at all, and the school should exercise its right to refuse anything less than the best. The health officer should refuse to perform the perfunctory job sometimes asked of him.

BOARDS OF EDUCATION

In the last analysis, most school health funds must originate in or be disbursed by local boards of education. The budgeting for disease

control programs, special classes for the partially sighted, testing programs, in fact, anything having to do with school health education must be done locally. Physicians and nurses must be paid for their work and will be listed as salaried employees of the board. Every element of a school health program must be approved and paid for ultimately by the board of education. That is why school administrators must know a great deal about health education in order to supply the board with appropriate recommendations.

AGENCY FUNDS

A practice has been established in recent years by voluntary health agencies and foundations of granting funds or providing services to schools. Books have been bought, salaries paid, indigents cared for, audiometers purchased, nursing and medical salaries paid, courses of study underwritten, scholarships provided by these organizations as they seek to improve the health of people through the medium of the school. Much of the pioneer work, the frontier development in school health education, has been made possible by grants given directly to local or state boards of education from these private agencies. School health educators should be familiar with such potential resources in their own communities.

Costs in Salaries

For health personnel other than teachers, standard salary scales are generally not in vogue in school health education. School nurses, dental hygienists, and some others in larger centers may have fixed salaries, but generally speaking, the salary for nonteaching personnel becomes a matter of local negotiation. The amount paid depends on the current supply and demand for such services. Nurses and physicians are best paid by annual contract in terms of a fair appraisal of the value of their time in relation to the services offered.

How many specialists should be employed? The answer to this question is problematical, but it has a great bearing upon the total cost of a health program. Certainly one nurse to every 1500 elementary pupils, a standard sometimes given, is too high a ratio. One to every 1000 or less would be better. A psychologist based on the same ratio, a dental hygienist to every 2000 pupils, a nutritionist to every 1000, and

a full or part-time dentist and physician, depending upon the scope and quality of work expected of them, would be not unreasonable standards. Costs can be figured only in terms of prevailing salaries.

THE HEALTH OF THE TEACHER

Of basic significance to any health education program is the health of the teacher. It is obvious that the teacher affects the pupil or student in many ways—by personal example, as a purveyor of knowledge, but also as a potential carrier of disease. For this reason, and because the teacher is in a profession which is not without its own hazards, the health of the teacher is of fundamental concern. It is not possible to discuss here in detail the provisions which should be made for teachers, but the following are the principal elements of health activity which have a bearing upon the life of a teacher.[29]

1. The teacher should be given every protection possible from communicable disease by requiring or providing recent immunization against poliomyelitis, mumps, smallpox, diphtheria, and any other preventable disease, for which science has a reasonably effective protection.

2. The teacher should be required to present satisfactory evidence of freedom from tuberculosis as a condition for annual employment.

3. Teachers who develop physical or mental incapacity should receive sympathetic treatment from boards of education in terms of continuance of salary, pensions, insurance aid, or other benefits, and ought not to be removed from employment until the handicap is proven irreversible and harmful to the children in the classroom.

4. "Good administration attempts to guard school personnel from pressures. Administrators have obligations to see that pressures both internal and external are not so great as to affect the health and proper functioning of the teacher."[30]

5. And the following provisions by school administration would also be of significance:

[29] See the very excellent yearbook of the American Association for Health, Physical Education and Recreation, *Fit to Teach*, Washington, D.C., N.E.A., 1957.

[30] Report of the Sixth National Conference on Physicians and Schools, *Physicians and Schools*, edited by W. W. Bauer, M.D., Chicago, Ill., American Medical Association, Bureau of Health Education, 1958, p. 53.

a. A healthful and attractive physical environment
b. The absence of excessive mental-emotional pressures
c. Rational teaching load and extended day assignments
d. Reasonable tenure and security
e. A healthful school-community social climate
f. Adequate sick leave provisions
g. Sabbatical and retirement provisions
h. Appropriate insurance programs
i. Pupil-teacher-parent-administrator interaction
j. Community recognition and respect[31]

6. Responsibility for maintaining some degree of good health is, of course, the teacher's own. To adjust to the problems of the classroom, to interrelationships with colleagues and parents, to recalcitrant children, and to the tedium of school routines, all require conscious effort and self-control. Maladjustment can easily develop among those teachers who refuse to take or cannot take responsibility for their own actions.

7. The serious problem of sick leave for teachers confronts most boards of education. It is basic to the morale of the teaching staff. What is an adequate arrangement for teachers who are ill during the school year? Can a system be devised which will neither penalize teachers nor be abused by them? It would be wise for teachers to remain away from school when they have respiratory diseases or are otherwise seriously incapacitated. And yet, if such absences are costly to them in income, many teachers will prefer to inflict themselves upon the children. If sick leave is financially attractive, some malingerers will stay away longer than is their due. The American Association of School Administrators has this to say about the problem:

Sick Leave—Although it is humanitarian to provide sick leave for school employees, the primary justification for a liberal sick-leave policy is the protection and benefits that accrue to pupils. Without sick-leave provisions, classroom teachers and other employees who cannot afford to lose even one day's salary may remain in school in direct contact with pupils when they are suffering from illness. A teacher who is ill cannot do a good job of teaching, and if the illness is contagious it is a direct hazard to the health of pupils.

State laws creating minimum sick-leave plans are becoming more and more numerous. Half the states now provide a minimum number of days of

[31] *Ibid.*, p. 58.

sick leave with pay. Many local school boards provide sick leave even though they are not required to do so and many grant additional leave beyond the state's minimum requirement. In numerous school systems, however, sick-leave provisions still are totally lacking or are far from adequate.

Where sick leave is authorized by state law or local regulations, the time allowed may vary from five to twenty days. Accumulated sick leave may vary from twenty to ninety days or more and school boards sometimes allow more than the stipulated number of accumulated sick-leave days to teachers who have rendered long and faithful service. Although a few employees probably take advantage of sick-leave provisions, the great majority do not avail themselves of the provisions as frequently as would be justifiable for both their own benefit and that of the pupils.

Medical examinations before school employees return to work after being ill are a safeguard to both pupils and teachers. Compensation for periods of absence frequently depends upon presentation of a certificate issued by a physician—a practice that appears to be justifiable.[32]

Equipment and Facilities

To buy scales, tongue depressors, first-aid equipment, biologicals for immunization, and other equipment for health services and to provide books and laboratory equipment for instruction costs money. Such materials should be provided for on the school budget. Ordinarily discounts are given to schools by supply houses. It is the experience of many that best equipment is the best investment. Inferior quality equipment, like second-rate sporting goods, is in the end most costly because it depreciates so rapidly. Superintendents and principals should expect their health personnel to combine their requests into an annual "asking" budget with provisions made for replacement requisitions during the year. In that way all interests—instructional, nursing, medical, nutritional, and others—will see their requests in relation to others and better all-school planning will result.

SELECTED READINGS

In addition to the footnoted references in this chapter, the following are well worth reading:

American Association for Health, Education and Physical Education and Recreation, *Fit to Teach—Yearbook on Teacher Health*, Washington, D.C., 1957, p. 249.

[32] *Health in Schools*, p. 61.

Fischer, Carl C., "The Role of the Advisory Health Council in the School Health Program," *Journal of School Health,* March, 1955, p. 82.

Hein, Fred V., and Dukelow, Donald A., "Physician Participation in School Health Services," a report on the analysis of a questionnaire to medical societies on physicians and schools, *American Journal of Public Health,* XLI (1951), 66–72. Also in *Journal of School Health,* 21, 191–200.

Jacobziner, Harold, and Culbert, Robert W., "The Role and Function of the Private Physician in the School Health Service Program," *New York State Journal of Medicine,* XLIII (1953), 51–56.

Jersild, Arthur T., *When Teachers Face Themselves,* New York, Bureau of Publications, Teachers College, Columbia University, 1955, p. 169.

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *The Nurse in the School,* Washington, D.C., N.E.A., 1940. (Under revision.)

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *Healthful School Living,* Washington, D.C., N.E.A., 1956, p. 40.

Kaessler, Henry W., "The School Health Advisory Council Which Works," *Journal of School Health,* March, 1950, pp. 82–85.

Kilander, H. F., "Health Services in City Schools—Administrative Aspects," *American Journal of Public Health,* XLIII (1953), 314–321.

Kreilis, R. W., "How the Lubbock School Health Council Organized to Meet the Health of Students," *Journal of School Health,* May, 1954, p. 134.

National Education Association, *Health in Schools,* Twentieth Yearbook, American Association of School Administrators, Washington, D.C., 1951.

Schneider, Elsa, and McNeely, Simon A., *Teachers Contribute to Health,* Washington, D.C., Federal Security Agency, 1951.

Smith, L. M., "A Survey of the Status of School Physicians," *Journal of School Health,* June, 1951.

Weaver, Ruth H., "Status and Functions of School Physicians," *Journal of School Health,* XXIV (1954), 164–168.

Wishik, Samuel W., "Administrative Jurisdiction of the School Health Service," *American Journal of Public Health,* July, 1951, p. 819.

Wison, Charles C., M.D., "The Council Can Be Proud," an impartial evaluation of the Nassau County School Health Council, *Ideas for Teachers,* XIX, No. 2 (1952–53).

World Health Organization Technical Report Series, No. 30, *Expert Committee on School Health Services,* Palais des Nations, Geneva, April, 1951.

— 17 —

Relationships with Physical Education

School health education and physical education have often been thought of as one and the same thing. Actually, they do have many important similarities, and yet there is enough difference between them to warrant recognition as two separate aspects of a total educational program. They share a common interest—the preservation of health and the development of the healthy integrated personality. Physical education is concerned also with the cultivation of leisure skills and the social orientation of people so necessary in preserving the techniques of living in the democratic way. In interest, the two fields have something in common—health—and yet are divergent.

In materials and techniques they are more different than alike. Physical education uses as its principal modes of expression the games, sports, and dances of the culture. Its ends are achieved by and through an immediate participation in swimming, all kinds of ball games, rhythms, camping, skating, climbing, children's games, and kindred activities, most of which bear not only upon the health of the participant, but upon his social and psychological orientation as well. In school health education the media are the acquisition of knowledge about living healthfully and immediate participation in healthful practice. Physical education uses almost exclusively motor expression and the behavior reactions which come along with the movements as they are organized into a recognizable game or dance. Health education relies mainly upon the acquisition of knowledge for current or later use and upon certain health activities now enacted for protection or development. The core of physical education is the skill of participation. Health education uses

the knowledge of health and the practices of living healthfully. There is much in common but there are also important differences between these two fields.

The differences should be well understood. Neither health education nor physical education should receive credit for the success of the other nor get the blame for failures. There is plenty of reason for adequate praise of both for their respective accomplishments and some justification for criticism of each field as it fails to meet the needs of children. In a modern and fully developed educational program there is room for both to exist side by side, and in harmony, without serious infringement upon each other's province.

For example, physical education has been held accountable for the seemingly alarming number of rejections of men under the Selective Service Act in the war of 1941–1945. Critics have said that better results should have been forthcoming after 25 years of compulsory physical education in schools and colleges. Such criticism is unwarranted and illogical for the following reasons: (1) The occurrence of the vast majority of rejections (sight, hearing, hernia, teeth, disease, illiteracy, psychological, nutritional, orthopedic) had nothing to do with a program of physical education. The rejections would have occurred with or without an activity program. (2) Those causes of rejection could also be found in the same persons ten years earlier, and failure to correct those that could be remedied can be laid to the inadequacy of correlation between school appraisal services, which might discover these things, and home and community corrective or reparative efforts. (3) Many of these disabilities are the by-products of imperfect genetic matching and would appear under any circumstances short of complete and arbitrary mating on a genetically scientific basis. (4) The methods used to discover disabilities in World War II were more searching than in earlier wars; hence, more handicaps were found. (5) Where musculoskeletal disabilities were found, particularly muscular weakness, there may be some liability on the part of physical education. But until the school organization permits an hour of activity every day throughout the 12 years of school life (in 1944 it was shown by the U.S. Office of Education that less than half the people in the twelfth grades throughout the nation had any physical education), one can hardly hold physical education accountable as a bulwark against the softening influence of a machine age.

One can sum up this relationship between physical education and military service medical rejections by quoting from an excellent article by C. H. McCloy: ". . . almost none of [the disabilities found on the service examinations] can be corrected or improved by physical education. None of them are of the type that would be altered significantly by physical education, unless there was an almost ideal medical follow-up accompanying it. . . . Practically none of the medical group believes that these draft statistics would be altered by 'putting people in shape.' They feel that the people to blame for draft rejections are the people who have given no thought to excellent medical care, and who have accumulated pathologies which are amenable only to prevention by excellent medical care. . . ."[1]

On the other hand, the program of play and sports has infinite and unexplored possibilities in the area of mental and social development. Its potential effect upon muscular strength is obvious. In the psychological and social fields, the contribution is real but as yet unexplored and uncharted. These latter contributions of physical education may, in time to come, be seen as of much greater significance than the effect on organic development, important though it is.

In planning the school curriculum, we include certain experiences that need no justification other than the joy and elation they provide children. Painting, music, sports, crafts, and various cooperative social endeavors are often justified as a preparation for later life, but they can also be defended on the basis of the immediate values they bestow.

The pleasure that the child experiences by engaging in music, arts, crafts, and sports may make him less vulnerable to anger, to jealousy, and even to fear. And his participation in these activities may so increase his social competence that he will feel less helpless, hopeless, and friendless in later situations.[2]

No one, particularly no one in physical education, should assume that muscular strength or skill alone is sufficient to produce an abundance of good health. Those who seek "physical fitness" only through the activities of the gymnasium and playfield are chasing an elusive

[1] Charles H. McCloy, "The Significance of the Draft Statistics," *The Physical Educator*, XV, No. 2 (May, 1958), 47.

[2] Henry P. Smith, *Psychology in Teaching*, Englewood Cliffs, N.J., Prentice-Hall, 1957, p. 79.

and nonexistent rainbow and ascribing far too much importance to the benefits of muscular exercise. There is no such thing as "physical" fitness, and if there were, muscular development alone would not produce it. The other aspects of living—nutritional, psychological, sex, immunity—have an even greater bearing when taken in the aggregate than does the muscular strength which may be produced from a program of physical education.

This is not to imply, however, that exercise has little bearing upon a total fitness of the individual for living. Far from it. Actual participation in a program of exercise throughout life is essential for fullest development and effective function.

For an understanding of fitness in its full context, the report of the American Association for Health, Physical Education and Recreation is illuminating:

> Fitness is that state which characterizes the degree to which the person is able to function. Fitness is an individual matter. It implies the ability of each person to live most effectively within his potentialities. Ability to function depends upon the physical, mental, emotional, social, and spiritual components of fitness, all of which are related to each other and are mutually interdependent.
>
> This means that each person, in order to satisfy his own needs and, at the same time, contribute his share to the welfare of society must possess:
>
> 1. Optimum organic health consistent with heredity and the application of present health knowledge
> 2. Sufficient coordination, strength, and vitality to meet emergencies, as well as the requirements of daily living
> 3. Emotional stability to meet the stresses and strains of modern life
> 4. Social consciousness and adaptability with respect to the requirements of group living
> 5. Sufficient knowledge and insight to make suitable decisions and arrive at feasible solutions to problems
> 6. Attitudes, values, and skills which stimulate satisfactory participation in a full range of daily activities
> 7. Spiritual and moral qualities which contribute the fullest measure of living in a democratic society[3]

[3] "Fitness for Youth," a statement prepared by the American Association for Health, Physical Education and Recreation, published in *Journal of Health, Physical Education and Recreation*, November, 1956, p. 10, and December, 1956, p. 8.

To elaborate on the relation between exercise and fitness, the report of a joint committee of the American Medical Association and the American Association for Health, Physical Education and Recreation clearly summarizes current knowledge on the subject.[4]

If, however, school health education is not well developed, if there is no physician serving the school, no appraisal program, no disease control or emergency care plan, no instruction in healthful living, no coordination with community services in health, then school health education is severely deficient and the children are profiting only from whatever sport program there may be in the school.

Thus it may be seen that, although alike in some respects, the media and techniques of health education and physical education are different. There is no justification for the development of one at the cost of the other. Both are of great significance in child life.

In personnel, the two fields have much in common. There has not yet appeared a very large professional group devoted to school health instruction and known as school health educators. There are history teachers, chemistry teachers, biological scientists, but no large group of health teachers. Aside from the important group of physicians and nurses now in the school health field, the development of school health education, particularly the instructional phases of it, has been largely the responsibility of physical education personnel. Speaking figuratively, when school administrators, early in the century, looked around for personnel to develop school health education programs of instruction and service, they found a very limited number of physicians and nurses available, but in nearly every school there was someone teaching physical education. He became the person, whether he was prepared or not, to develop as much of school health education as he could. The result of this alliance has been a widespread, although qualitatively spotty, development of health education in schools and colleges.

Today hundreds of colleges and universities prepare physical education teachers in health education *and* in physical education to meet the demand from schools. Until the time comes when there will be a specially prepared personnel in school health education, supplemented by an adequate supply of school physicians and nurses, home economists and biologists, psychologists and dentists, the physical education

[4] F. V. Hein (ed.), "Exercise and Fitness, A Statement on the Role of Exercise in Fitness," the American Medical Association and the American Association for Health, Physical Education and Recreation, *Journal of Health, Physical Education and Recreation*, April, 1958, p. 40.

teacher will have to remain in the "carrying" position. His opportunity is great; ordinarily his enthusiasm is adequate; his training for school health edcation could be improved.

Health education and physical education use, then, in more instances than not, the same personnel. Physical education teachers should, perhaps, be known as teachers of school health and physical education. There is no organic reason why programs of health instruction, health service, and physical education cannot be wholly developed and integrated in harmonious relationship for the ultimate good of the student. Neither personal differences nor professional jealousies should be allowed to interfere with such a development.

PHYSICAL EDUCATION AND HEALTH

The possibilities and limitations of a school program of physical education in regard to personal health should be well understood. Because of the great popularity of modern physical education, particularly the intramural and interschool athletic programs, schools have an exceptional opportunity to make a contribution to the health of the participants—and, of course, an equal opportunity to detract from it. Whether the activity program is an asset or a liability depends upon its administration. The adults in charge—the principal, superintendent, physical education teacher, coach, medical adviser—these are the ones in the key positions who can make of physical education, including athletics, a fine experience for growth and development, or an experience of harm.

Fundamentally, physical education is a multi-objective field. The entire complex organization of varied activities seeks (1) to contribute to the social orientation of children, (2) to contribute to psychological integration, and (3) to contribute to organic strength and power. In a broad sense the attainment of all of these objectives would have a bearing upon the health of the individual. Certainly a program which, mindful of its first objective, seeks harmony between persons and groups, seeks to teach the techniques of intragroup behavior as basic to living successfully in a democracy, or strives to give meaning to the basic common concepts of fair play and honesty, has a bearing on health. Or, in quest of its second objective, if it seeks through play activities to provide each child with experience of success, of identification with a group, of extroversion and objectiveness, or to assure

the elemental pleasures of fun and deep-rooted satisfactions which come from being active kinesthetically, then physical education basically comes even closer to an attainable relationship with health. Its third objective, organic strength and power, is, of course, clearly basic to health. The attainment of these is a matter of program building, administrative and teaching practice, and personnel relationships.

Program Building for Health

Experience is showing that the best results in terms of the health of participants will accrue if:

1. *All* students in school and college receive instruction every year in physical education activities.
2. Students are provided a wide variety of activities chosen in relation to the age, sex, and need of the students, ranging through the entire gamut of rhythms, games, aquatics, sports, stunts, camping, and outdoor activities, and not limited to a few overly popular sports like basketball and football.
3. Students are classified for participation by using a medical examination (or its best substitute) as a means of selection.
4. A program of emergency and accident care is in operation at all times.
5. Highly competitive sport (e.g., interscholastic athletics) is reserved for boys and girls of the upper four years of secondary school and is not superimposed upon younger children whose organic development and emotional maturity are incapable of carrying the burden of a competitive season successfully.
6. Boxing is restricted to instruction only and head blows and bouts are eliminated in the school program.
7. The best of training and conditioning practices are used for the interschool and intramural competitive leagues.
8. Injured players receive prompt and adequate medical care.
9. Girls with menstrual difficulties should receive medical clearance before participation.
10. The atmosphere of the physical education class is one of pleasure rather than grimness, creative expression rather than imitation, objectivity rather than inward subjectivity and introversion, success rather than failure, informality rather than formal discipline, "like" rather than "dislike." If children enjoy and look forward to

their physical education period, rather than try to avoid "taking gym," health values have a greater chance of development.

Teaching Practice

In a curricular sense, there may be a high correlation between physical education and health education. The physical education teacher is confronted on all sides with an opportunity to teach hygiene, and a student cannot attend a single physical education class without having some experience bearing upon his health. The important thing for the teacher to secure is the *best* in correlation and experience. Correlation opportunities appear in the following areas:

1. The development of intelligent practice and understanding concerning infection, cleanliness, bathing, and clothing
2. The development of an understanding of the need for and skill in physical activity as a means of developing organic and psychological strengths
3. The experience of understanding competent medical practice and first-aid care
4. An understanding of safety practice and precaution
5. Experience in emotional control, control of temper and language, and self-direction in the expenditure of enthusiasms and energy
6. An understanding of the need and time for rest, the origins of fatigue, relation to infection
7. An understanding of diet, conditioning, fads and fallacies in athletic training
8. A comprehension of the existence and meaning of individual differences in endocrine, cardiac, and other organic functions
9. Experience in the psychological states of achievement, failure, envy, unselfishness, gratitude, sharing, identification, personal appraisal, independence, security, and self-reliance
10. Experience and understanding of the sex role in life, including sex differences, boy-girl relationships, shared interests
11. An appreciation of play and recreation in life, the value of winning, the lasting values, the continuous participation in recreational activities, self-imposed limitations.[5]

[5] Adapted from *The Contribution of the Physical Education Program to the Health Education at University School,* The Ohio State University, Department of University Schools, 1946.

These elements are teachable both by discussion and by laboratory experience. Their achievement would illustrate a high correlation between health education and physical education.

Personnel Relationships

The physical education teacher, often the inspiration and the catalyst of a school health and physical education program, must be extraordinarily observant of the prerogatives of others and the limitations of his own training and abilities. To work successfully within the complex structure which is school health education requires patience, tact, and modesty, and the physical education teacher must cultivate these in good measure. The public is likely to think of the physical education teacher, who is "the coach of the team," as the principal figure in the health program. Athletics loom large in the public eye and thus there may be some distortion of value between physical education and health education. To avoid this all concerned must work in clear relationships with complete and frank understandings and, above all, with mutual respect.

To achieve this harmony in relationships the physical education teacher should:

1. Under no circumstances make a diagnosis of a disease, ailment, or injury.
2. Never usurp any function of therapy or treatment normally belonging to physicians.
3. Acknowledge that in matters pertaining to the participation of the disabled or handicapped in specific activities, the medical judgment is the better and final one.
4. Abandon all pretense of mass corrective exercises given without benefit of a differential diagnosis on individual cases, and realize that such "shotgun" corrective techniques are outmoded and unscientific.
5. Abide strictly by properly constituted medical judgment in regard to the participation of athletes in interschool sport.
6. Never seek to play one physician against another for the sake of making a player eligible to play because of a difference of opinion. The authority for determining eligibility as it relates to condition should be vested in one person and the judgment of that person made inviolable.

Likewise, and in return, the physician should:

1. Familiarize himself entirely with the purposes and nature of the physical education program and understand its flexibility as regards adaptations to individual needs.
2. Suggest no permanent "excuses" from physical education, but refer the handicapped student with, if need be, a recommendation for temporary inactivity and recommendation as to the kind of activity the pupil-patient might successfully undertake.
3. Serve as a consultant on the scientific accuracy of teaching materials in health instruction, but not as a determiner of technique of presentation or curriculum organization unless particularly qualified to do so.
4. Make the periodic examinations of children for physical education or for athletic competition experiences of worth and examples of the best in medical appraisal.
5. Cooperate fully with educational personnel in the development of the school health program, resisting temptations to remain aloof and above such necessary cooperative planning.

CLASSIFICATION FOR PHYSICAL EDUCATION INCLUDING ATHLETICS

A modern program of physical education seeks as much individualization of its instruction as it can reasonably attain in the local situation. It recognizes that, ideally, the best program would organize groups only after the individual needs, capacities, and condition are known. Modern physical education abhors mass handling of students. It has moved away from the nineteenth-century practice of large classes, impersonal drillmasters, and the "rough and tough" theory of vigorous sport for all regardless of individual differences. The first screen in the effort to individualize the program is the physical examination (and the seasonal examination for athletes). No modern teacher of physical education wants to organize and conduct his program without some knowledge of the psychological and organic states of the students. No classroom teacher should be expected to teach physical education or conduct the play period in ignorance of whatever organic or psychological states there are which would have a bearing upon the behavior or skill of the pupils.

Hence, the first screen or appraisal, the first instrument by which placement is made in modern physical education (including athletics), is the examination. From that appraisal students may go (1) to the elective program, (2) to the normal program of instruction, (3) to the program of individual or adapted physical education where limited, restricted, or corrective activities may be applied *in relation to the nature and need of the student.* At this point the interchange of ideas and recommendations between physical education teacher and physician reaches a peak. Each must be aware of the other's program and point of view. The day of wholesale excuses from physical education has passed, and physicians should recommend the type of activity best suited to the individual child knowing that an imaginative and competent physical education teacher will find something worthwhile for every child regardless of his handicap.

For it must be realized that the social, psychological, and organic values of a well-conducted program of physical education are as much the right of the blind, crippled, and maladjusted as they are the heritage of the superb athlete. The victim of poliomyelitis who can find a new world in swimming, the amputee who can forget his disability on the golf course, the pituitary victim known as "Fatty," who can gain status by being a manager or squad leader, and the blind child who can live less in darkness by being accepted as a player—these are persons at every level of education whom physical education cannot overlook. They must *not* be "excused." They must be planned for, worked with, and extended a physical education geared to their potentialities. The health value of such development is unmistakable. The conference of physician (school or family), parent, physical education teacher, and teacher which brings about selection of such activities as are fitting is one of the important professional conferences in school health education.

HEALTH PERMITS FOR COMPETITIVE SPORT

The tremendous popularity of intramural, and more particularly interscholastic, sport makes the supervision of the health of the participants signally important. Safe fields, pools, and gymnasiums must be provided, equipment must be protective, accident and injury provisions must be made, and players must enter the contests in an ap-

proved state of physical condition. To achieve all the foregoing requires coordinated effort and intelligent planning and administration.

Players to be approved for participation should be examined seasonally by a medical doctor. A record of acceptance for play at the time of the examination should be on file in the school office. Consensus as to what standards athletes (boys and girls) must meet seems to include the following:

1. No acute infection
2. No infection of eyes, and playing permitted only if free from a handicapping vision defect
3. No infectious discharge of the ears
4. No oral, nasal, or sinus cystic condition
5. No organic heart or other detrimental condition
6. No tuberculosis or pleurisy within one year
7. No asthma within six months, and no recent frequent bronchitis
8. No endangering structural (posture) deformity
9. No hernia or nephritis
10. No nervous or psychological condition judged detrimental for playing
11. No disordered menses
12. Postoperation condition, if any, judged safe by operating physician.[6]

The use, enforcement, and development of any such standards are entirely dependent upon the judgment of the physician doing the examining. The conditions that would make it inadvisable for a boy or girl to participate in interscholastic sport cannot be well described on paper. The foregoing standards are best used as guides, and physicians will recognize how imperative it is to interpret the suggestions in terms of *the conditions as found in the athlete.*

The administration of such judgments on eligibility for play may be made somewhat more definite as follows:

1. If parental approval is obtained for interscholastic play (and

[6] For detailed standards on fitness of boys and girls for athletic competition the reader is referred to: (a) local standards of outstanding school or college programs; (b) the "Report of Committees on Standards of Physical Fitness for Students (Boys) Who Engage in Competitive Athletics," *Journal of School Health,* March, 1943, p. 57; (c) a similar article for girls in *Journal of School Health,* April, 1943, p. 83; and (d) Chapter 9 of *Health in Schools,* Twentieth Yearbook of the American Association of School Administrators, 1951.

many schools believe this is wise), it should be recognized that this in no way, morally or legally, absolves the school from its responsibility to supply adequate supervision, safe transportation, and a healthful environment for players. Much false security is found in these parental permissions. They really mean little more than that the parent knows the student is playing. Liability for injury remains the same in the event that injury results from professional negligence on the part of school personnel.

2. If there is no physician serving the school for athletic examinations, the school should seek the aid of family (local) physicians in examining all athletes seasonally and reporting their findings and recommendations on a standard school form to be filed in the school office. The school personnel, in conference with representative local physicians (perhaps those on the health council), should determine the kind of examination to be judged adequate for the purpose, and all physicians examining athletes should do no less than the minimum examination requested. If the family physician, under this arrangement, judges an athlete unacceptable for competition he or she should *not* be played under any circumstances. If an athlete about whose health there is some doubt in the minds of school personnel is judged acceptable by the family physician, it must be remembered that the responsibility for the decision to play or not to play still remains with school personnel.

3. If a physician is employed to serve the school program he should be expected to exercise final judgment in all cases of athletic eligibility relating to health. All school personnel should abide by his judgment. His responsible position should be known throughout the school system and the community.

4. Physical education teachers (coaches) should have access to medical advice at any time throughout the season for review of any case. Such teachers should be alert to any deterioration in the condition of their athletes and should not hesitate to seek the facts. All athletes "out" because of illness or injury should be checked medically before being allowed to resume play.

In a helpful article entitled "Examination and Evaluation of High School Athletes," Dr. Thomas E. Shaffer has described the condition under which judgment should be formed concerning eligibility for

play. Excerpts of that article are reproduced here for their obvious value to all coaches, administrators, and physicians:

The examiner should be thorough and should bear in mind the health problems which are most apt to occur during adolescence. The chief objectives are (a) discovery of symptoms or signs which require diagnostic study and (b) disclosure of characteristics which would help the coach and other teachers to understand the pupil better. For many youngsters, this examination is the only one they will have for many years, and it would be short-sighted indeed to limit the appraisal only to organs or body systems which are affected by physical exertion.

Valid conclusions cannot be drawn from a physical examination unless there is also a health history to increase its meaning. A lengthy account of medical minutiae is not required. A brief questionnaire to disclose past happenings would be sufficient, for these events can be amplified during the interview. . . .

There are some procedures which are especially meaningful in the examination of athletes. One of these is appraisal of vision. . . .

Unquestionably, hearing should be tested, preferably by a puretone audiometer. . . .

Routine examination should include pulse rate and blood pressure when the subject is resting, palpation of the cardiac apex impulse, and the femoral pulses, and diligent search for cardiac murmurs. Many murmurs are inconstant as the patient changes from sitting to supine to lateral-prone positions. The latter position is favored to make significant murmurs more evident. . . .

In general, it may be said that systolic murmurs limited to the base of the heart are probably insignificant when there is no history suggesting rheumatic fever, congenital heart abnormality, or systemic disease (anemia) known to cause this type of murmur. . . .

Murmurs in diastole are always suspected as possible signs of organic disease and demand careful diagnostic examination. . . .

Competitive athletics do not allow for voluntary rest periods, and, with the possible exception of baseball, are not recommended for individuals with structural heart abnormalities. . . .

There is a difference among healthy individuals, however, in their ability to recover after exercise. This is a capacity which can be improved by "conditioning." The examination of athletes is incomplete unless a test to determine their "recoverability" from hard exercise is used. . . .

Examination for hernia, hydrocele, and undescended testis are necessary, and require only brief comment. The existence of any type of hernia pre-

cludes athletic activity, although one might argue that a hernia would never be as vulnerable to injury as the head, face and joints. . . .

Large hydroceles disqualify for strenuous exercise and contact activities, and an undescended testis which rests in the inguinal canal is obviously vulnerable. . . .

Fractures, sprains, and dislocations comprise most of the injuries in athletics. Adolescents are especially susceptible because the epiphyses of their bones are not fused to the shaft and their muscles and ligaments are relatively weak. Special attention should thus be directed to the bones, joints, and muscles. Muscle atrophy and limitation of movement should be looked for as well as areas of tenderness around joints. One should observe posture while the subject is in motion, and the gait should be studied. One of the common crippling disorders of adolescence is slipping of the femoral epiphysis, which could be suspected only from an unexplained limp. . . .

Weight and height measurements, urinalysis and a tuberculin test should be included in the examination of all adolescents and the athlete is no exception. . . .

Active immunization against tetanus is especially advisable because of the unusual exposure to injury. . . .

There is a factor of *readiness* which applies especially to adolescents. All aspects of growth and development never proceed at the same rate, but in the spurt which precedes and takes place in puberty they are completely disorganized. Chronological age is not a reliable index of physiological development. The former is the basis for classification in schools and the latter is the essence of grouping in athletics. Just as the "step-test" is a means of determining readiness for strenuous exercise, so we would like to have a tool for appraising readiness to participate in competition with others of the same age. There is no similarly reliable measure of physiological maturity, however. . . .

The physician's function is not discharged by the pre-training examination. Every illness, injury, and referral by the coach requires a re-examination and re-evaluation. It is particularly important to keep in mind that recovery from illness or injury is not sufficient for return to competition. There is the important factor of "condition" or ability to recover from strenuous activity, which had to be developed in the first place and usually is lost when exercise is curtailed. Condition is not a requirement for becoming a member of the squad, but it is demanded by competition. . . .

Unwarranted restrictions on activity, based on unconfirmed suspicions of impaired health, may seriously harm a youth's personality by planting fears and feelings of inferiority. Accurate diagnosis, not usually obtainable in a

school, is as important to the child who turns out to be healthy as it is to the one who actually needs medical supervision. . . .[7]

PROBLEMS OF SCHOOLS WITHOUT A PHYSICIAN

Roughly 70 percent of high school graduates come from schools offering programs of physical education which had no medical examination at their beginning. It would be judged that less than half the schools employ the services of a physician. Unless arrangements are worked out with local or family practitioners, much of the foregoing relationship between health education and physical education is inoperative. In the rural and small village areas as well as in some of the more lethargic city systems physicians either are unavailable, are disinterested, or have not been invited to serve the school. In this very realistic position the physical education teacher must choose between three procedures: give up the program of sports entirely, carry it on with no regard whatsoever for the health conditions of the pupils, or develop a plan of screening by history-taking and observation which he, himself, can use with some good effect. The latter is an entirely feasible alternative. Hixson has devised a screen of three parts—a personal history, a physical inspection check sheet, and an observation check sheet.[8] By using this screen the physical education teacher may do very well in choosing those students who should be limited in their physical education, made ineligible for athletic competition, and referred to family or local physicians for examination and report. No suggestion is given that this screen is equivalent in effectiveness to or should take the place of an examination by a physician, but where medical assistance is not at hand some such carefully designed screen should be used.

The procedure suggested by Hixson includes in brief:

1. Advisement of local physicians that screen will be used—not as diagnostic instrument but to find referrals
2. Distribution of personal history record to all students for filling in at home and returning to school

[7] Thomas E. Shaffer, *Journal of School Health*, February, 1951, p. 51.

[8] C. G. Hixson, "A Method of Screening Boys for Physical Education in the Absence of a Physical Examination," Department of Physical Education, The Ohio State University, 1947; see Appendix.

3. Review of all personal histories and segregation of all cases where history shows a condition contraindicating physical education and athletic competition
4. Observation of all students for detection of any deviations from normal health not otherwise shown on history record
5. From history and observation, referral of all suspicious cases to available physicians for judgment
6. The alertness of the physical education teacher for all deviations from normal behavior, and where signs of undue fatigue or other deviations appear the placement of the student on the referral, and restricted or ineligible, list

The key to this plan is the personal history check list and observation form which provide the information to the teacher. They are both found, with permission of the author, in the Appendix.

SUMMARY

Thus, the relationships between school health education and physical education are drawn. They are at once alike and different in their program and techniques. In ultimate objective they are the same, in personnel they share. The two fields should be developed in harmony with each other. Abuses and inadequacies in both should be eliminated and an integrated program of health and physical education brought to maturity.

SELECTED READINGS

Brownell, Clifford Lee, and Hagman, Patricia, *Physical Education—Foundations and Principles*, New York, McGraw-Hill, 1951.

Cowell, Charles C., *Scientific Foundations of Physical Education*, New York, Harper, 1953.

Daniels, Arthur S., *Adapted Physical Education*, New York, Harper, 1954.

Doscher, Nathan, and Walke, Nelson, "The Status of Liability for School Physical Education Accidents and Its Relationship to the Health Program," *Research Quarterly*, October, 1952, p. 280.

Oberteuffer, Delbert, *Physical Education*, Revised Edition, New York, Harper, 1958.

Report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association,

Answers to Health Questions in Physical Education, Washington, D.C., N.E.A. and A.M.A., 1959.

Scott, Harry A., *Competitive Sports in Schools and Colleges,* New York, Harper, 1951.

Williams, Jesse Feiring, and Brownell, C. L., *The Administration of Health and Physical Education,* Seventh Edition, Philadelphia, Saunders, 1959.

— 18 —

School and Community Relationships

A program of school health education can never wisely develop in isolation from individuals and groups in the community. The nature of the health problems of childhood, the traditional and accepted concept of family responsibility for the health of children, and the function of the physician and dentist in society make it altogether desirable that whatever efforts are expended by the school toward improving health be made in coordination with other community influences. The school, when it is best conceived, *is* a part of the community anyway. It cannot help but be concerned about and related to the factors in the community which bear upon the health of people. Only the outworn notion that the school is a classical, cloistered, and superior institution removed from the workaday problems of community life would justify a health program constructed without reference to persons and agencies elsewhere who are concerned about child health or the school.

Educators now understand that a great curse remains upon schools as long as the public thinks of school and college life as a happy period of innocent learning unrelated to realities of life "out of school." Modern schools break down this distinction—"going to school" becomes an experience in community living, since school life is filled with problems which are real, which have come from life as it is being lived in the nation.

The school health program thus deals realistically with improving the health of its constituents. It discovers the needs of childhood and institutes procedures within or outside the school which are necessary to meet those needs. In so doing, the school rubs elbows with parents,

private physicians and dentists, private and public health agencies, the worlds of commerce and politics, and with those who for various reasons oppose scientific health procedures. Such interrelationships could and sometimes do become confusing.

Once a school or school system decides that it must "do something" about the health of its children, it becomes committed to a planned development of interrelationship with persons and agencies from which there is no turning back. Generally speaking it is in localities where this interrelationship has been explored and used to the fullest that the most intelligent and productive school health programs are found. That school which is concerned about its "public relations," and wants to gear its program as perfectly as possible into a position of leadership within the community, will find such efforts rewarding in terms of better school programs. It is entirely possible to be responsive to local customs and local policies and yet lead the way to improved health conditions and health practices.

RELATIONS TO PARENTS

The home-school relationship should be the closest of all. Through every known device the parents should be encouraged to accept their crucial part in improving the health status and the health practices of their children.

Parents should also be specifically acquainted with the health needs of their children as revealed in school health records. Thus the family can seek needed medical care, plan diet changes, make alterations in daily routine, and take any other necessary steps at home and in the community for the health improvement of the child. To this end the school should regularly report to parents on the child's health status and make immediate notification of serious deviations. Whenever necessary, parents should be invited to come to the school at a stated time to discuss their child's health needs with the school medical advisor, nurse, teacher, or other qualified health service personnel. Such conferences should be considered part of the normal working load of the school staff and time for them budgeted. If the parents do not come to the school, the school nurse or a teacher should visit them to interpret the child's urgent health needs.[1]

[1] National Committee on School Health Policies of the National Conference for Cooperation in School Health, *Suggested School Health Policies*, Second Edition, Health Education Council, 1946, p. 29.

Parents should be given a chance to express themselves concerning any phase of the school health program. Parent study groups on problems of child health can be organized. The parent-teacher group can devote time to studying improvements in school health education. The program can become the subject of public forum and debate. For without parental action or hampered by parental apathy or distrust, not much can be done for the individual students in need of assistance. It must be clear to parents that the interest of the school in the health of children is a valid one—for educational as well as developmental and protective purposes—and that the school is prepared to go far in serving its objectives in health education.

Many parents, for reasons of indigence, neglect, or ignorance, are unable or unwilling to play their part in the plans outlined to improve their children's health. In such instances, the school is justified in going to lengths to mobilize community resources in aid to the indigent and in dealing with the courts when child health is being willfully neglected or jeopardized. Mindful of its limitations, the school itself cannot supply or perform medical aid; it is in no position to enforce the selection of a physician; it cannot, in many states, enforce vaccination. It can, however, play its part in making medical aid available, it can help parents choose physicians and dentists, and it can establish vaccination and other protective measures as conditions of entrance in order to protect the school population.

Basic to any intelligent relationships with parents is the need for keeping them informed of school policies and action. Parents cannot be expected to react with very much interest or to be very helpful if they do not know what the program of the school is or the principles upon which it is based. Parents are naturally concerned about the welfare of their own children and when the schools deal in any way with the health of these children the parents want to know all about it.

For those reasons the schools should develop a plan for getting information to parents. Occasional announcements in parent groups are not enough. Bulletins should be issued periodically, policies should be stated in writing, and each household should have a copy. Full notice should be given of every move in the health education program. The parents should have full access to information about such things as athletic insurance, policies for dealing with injuries incurred under school auspices, emergency and accident care, immunization require-

ments and program, the purpose and nature of the physical examination programs, vision and hearing testing, policies regarding exclusion, absences and readmission for illness, and the functions of all personnel in school relating to the health of children.

Perhaps future years will see even more fruitful relationships between schools and parents than are now practical in many places. *The school is increasingly becoming a great community center* where families gather for social purposes and at the same time participate in those activities which make for healthful living. Precedent for this is set in many current institutions like YMCA's, YWCA's, Turnvereins. It finds complete expression in an English effort which, although not centering in a school, nevertheless indicates how a well-planned school could be used for healthful family living:

. . . The new center, built to service 2,000 families, was opened in 1935. It offered consultative services as before, but in addition it provided the facilities for the exercise of the physical, mental, and social capacities so necessary for health. It was a physical structure of steel and concrete, but more important it was a social structure based upon a new unit. . . .

The plan of action was patterned after a family club, with periodic health overhauls for all members and with the various auxiliary services for infants, children, and parents. . . . The Peckham community had been selected because it was an average community, and yet 90 per cent of the individuals (3,911 had been examined) were not healthy. . . . In the center of the building was a 35-by-75 foot swimming pool, visible from each floor through a continuous band of glass. On the ground floor were the nursery, gymnasium, playground, theater, storerooms, and service rooms. The second floor housed the main recreation and dance floor, the cafeteria, and several small activity rooms. On the third floor were the laboratories and consultation rooms, a recreation room, work room, band room, and committee room. The building was properly insulated and soundproofed. Most of the facilities were designed for self-service.

At different times of the day one may see children in the nursery, waders in the pool, toddlers on the swings and slides, and any one or several of the following activities in progress: sewing, handicraft, games, bicycling, keep-fit classes, swimming, billiards, dancing, band, drama, chess, public speaking, tap dancing, boxing, tumbling, roller skating, parties, hiking, luncheon in the cafeteria, and study groups. More recently the center has acquired a farm and camp which provide many week-end activities in the open. The center often accommodates 1,200 persons on Saturday nights. It is open from 2 to 10 P.M. daily except Sunday. . . .

All the activity within the center is voluntary and spontaneous. There is no center hostess, no one to make introductions, very little programming, no herding, coaxing, or guiding to action. Earlier attempts at promotion have been abandoned. . . . This is the reason for membership on the family basis, the unit of living. In the presence of a vertical age grouping, where youth is surrounded by every stage of maturity and every degree of skill, there are present and natural incentives to development. The children are growing up in families which are expanding their physical, social, and intellectual contacts because of the activities of the center. As the parents penetrate the active society which surrounds them and the child shares their experiences, his confidence expands and he reaches for new forms of activity. This can only come about where the young are in contact with a society which includes people of varying degrees of maturity, possessing varying degrees of accomplishment. . . .

The Peckham Center is the only one of its kind in the world. It is not an assemblage of clinics and social workers; it is a center in the community from which the family, the living cell of society, can be sustained in its growth and development.[2]

An experiment like this would not be out of the question for American communities. There are many school buildings now which could be immediately used for such purposes. The buildings of the future should surely be planned with such things in mind. If schools are interested in people's health, school personnel should fully correlate their efforts with those of interested citizens to bring opportunities for living healthfully closer to home.

RELATION OF SCHOOLS TO PHYSICIANS, DENTISTS, AND THEIR SOCIETIES

There is a reciprocal relationship possible between the school health program and private physicians, dentists, and medical and dental societies. Fully developed, such a relationship would enhance the position and program of all concerned. It has taken many years to bring about a mutual understanding between the educator and the physician and dentist. The following suggestions are made with the idea of deepening that understanding in communities:

[2] Innes Pearse and Lucy Crocker, *The Peckham Experiment,* Yale University Press, 1945. Reviewed by D. M. Hall in *Research Quarterly,* October, 1947, p. 232.

1. Schools should invite local physicians and dentists to serve on school health committees and on health councils in city systems. They should share in the planning and problem solving which occupies the time of such councils. Invitations for such service should be extended through the local medical and dental societies. If a particular physician or dentist is wanted for a specific purpose, he may be invited directly, but generally it is best to allow the representatives from the local professional groups to pick their own.

2. In recent years, particularly as a result of the encouragement given local medical societies by the parent organization, the American Medical Association, and with the encouragement also of the American Dental Association, the state and local medical and dental societies have been appointing school health committees. These become usually very effective liaison groups with school programs. They serve as intermediaries and can very effectively make the task of cooperation between medical and educational groups easier.

The function of such school health committees in medical and dental societies has been described as (1) to stimulate cooperation by individual physicians in the school health program, (2) to keep the profession informed on school health problems, (3) to encourage sanction by the medical profession of a sound school health program, and (4) to report to the profession on progress. The medical society committee can perform these functions most effectively, within the framework of the community, by developing reciprocal relations with the dental society, school system, health department, parent groups, and other appropriate organizations. Such relationships can best be achieved through the formation of a school health council or committee, or its equivalent. Specifically such a committee could:

a. Aid in the establishment of health appraisal standards, including standards for physical examinations, observation, and screening.
b. Assist in the development of adequate cumulative health records and facilitation of the proper interchange of appropriate data among schools, family medical advisor, and parents.
c. Help formulate policies for handling of confidential medical information relating to the health problems of pupils and school personnel.
d. Assist in the development of follow-up procedures including effective methods of referring children needing attention to the family physician

and dentist or other community resources and evaluation of the effectiveness of such follow-up.

e. Advise on the health and medical aspects of school administration, such as health counseling done by nonmedical personnel and the formulation of a plan for the prompt handling of school medical emergencies.
f. Provide counsel on communicable disease control, including immunization procedures, exclusion and readmission policies, quarantine regulations, and specific disease detection.
g. Help in the establishment of health and safety measures to protect participants in physical education and athletics.
h. Aid in the development of standards for safety and sanitation in the general school environment, including procedures for inspection and methods of improving dietary standards in the school lunchroom and other food services.
i. Advise and counsel on the emotional factors in the school environment and their implications for pupils and school personnel.
j. Provide advice concerning the health problems of the handicapped child, especially in regard to adjustment to irremedial handicaps and interpretation of the emotional implications of the school environment for such children.
k. Aid in the evaluation and selection of health education materials with particular reference to their scientific accuracy.
l. Encourage utilization of the private physician as a resource person in the health instruction program.
m. Assist in intelligent understanding and utilization of the health resources of the community.
n. Help formulate standards for the qualification of various personnel involved in health education and health services in the schools.
o. Assist in establishing sound policies and procedures to guide the health and medical supervision of school personnel.
p. Advise the medical society on legislative and financial needs of the school health program.[3]

In addition, the medical or dental committees can supply students with materials and opportunities to study current problems of medical and dental care of the public. Considerable misunderstanding exists in the minds of the general public about dentistry or medicine because the groups representing those sciences have rarely supplied the school

[3] Fred V. Hein and Donald A. Dukelow, M.D. (eds.), *Physicians and Schools*, Report of the Fourth National Conference on Physicians and Schools, Chicago, American Medical Association, 1954, pp. 56–57.

health education programs with appropriate educational materials. Furthermore, in view of the fact that these professional societies and their national organizations are significant in the national scene, their policies and activities should be known to schools. A study of the American Dental Association, the American Medical Association, the American Public Health Association, and all other professional agencies or associations dealing with the health of people could well become not only a study for health council personnel, but a unit of work in the health instruction of high school and college students.

3. Schools and medical societies should cooperate in supplying to indigent people, or to those who have never selected a family physician, a panel of names from which to pick when the need arises.

4. Where no physician serves the school and, thus, no adequate program of classification or appraisal of pupils is established, schools should confer with local physicians to determine whether they would examine their own patients as well as others and, for a fee, make standard examinations and report the findings to the school personnel for use. Such procedures have been successful and neighborhood physicians are usually pleased to meet new patients and to cooperate in the appraisal of school personnel.

5. As has been said, the family physicians should be used wherever possible and useful for school examinations and for supplying data necessary for educational adaptations to individual children. As Spock explains:

> The school should do everything possible not only to preserve but to improve the family's contact with their own doctor. It should specifically emphasize the importance of the routine visit to the doctor, and perhaps even make it obligatory where the economic level justifies it or alternatively where clinic facilities are adequate. But this does not mean that the school physician should be denied the firsthand knowledge of the pupil which only his own examination will give him. If he is seriously to fulfill the general function . . . of being that member of the school staff who integrates the physical and emotional with the other aspects of development which the school as its main job seeks to foster, he cannot delegate the actual observation of the material on the basis of which he is to form his judgments to an indefinite number of other physicians each of whom will have his own particular set of standards. . . . But, as the school physician needs his own observation of the pupil to estimate him against the background of his own experience and of his observation of the class, he needs also the

private physician's past observations to estimate the pupil against the background of his past and of his family. It would be highly desirable to get this type of information in fairly full form at the first admission to the school, with additions from year to year, entirely apart from the information derived from the parents. . . .

Though the point has been stressed that both school and private physicians should make routine physical examinations, this does not of itself dispose of the various laboratory tests. These include urinalysis, blood counts, tuberculin tests, Schick tests. It is important that these tests be performed by the private doctor, and the school's desire for this can be indicated by headings on the blank sent to the private physician. . . .

These tests may also be performed in low-income areas by clinics, if the clinics have the facilities and are willing to perform them routinely. If private examinations, including laboratory tests, are beyond the purses of the families of the school community (as they will be in many), and if the clinics are unable to perform them routinely, then the lot falls to the school.[4]

RELATION OF SCHOOLS TO BOARDS OF HEALTH, CLINICS, AND COUNCILS

Relationships between the school and official agencies, such as the board of health and public clinics, are clear enough in principle.

Whatever may be the administrative status of the health or medical service, every school health program involves cooperation between school and health authorities. The location of personnel is less important than agreement on the objectives to be attained, and on the clear-cut delineation of the appropriate functions and duties which each individual will perform in achieving the objectives. The school administrator and the health department administrator work together to develop mutual understanding of the needs of children and the way these needs can be met. Cooperation and adaptation are needed in determining objectives as new problems appear. The school administrator's responsibility in assigning functions may vary according to the local procedure, but it remains constant for seeing that the functions themselves are performed in one way or another and that the objectives of the program as a whole are reached.[5]

[4] Benjamin Spock, M.D., "The Modern School Physician: Relations with Parents and Community," *Journal of School Health*, May, 1941, p. 136.

[5] Report of the National Conference for Cooperation in Health Education, *The School Administrator, Physician, and Nurse in the School Health Program*, Metropolitan Life Insurance Co. Monograph No. 13, 1944, p. 14.

State laws will indicate whether the local or state health officer may close the schools in case of epidemics, whether he may require vaccination of all those attending school, and whether he has the power to "abate any nuisance" or remove any hazard to the public health. These are powers usually vested in boards of health, and boards of education should cooperate fully in their execution.

On the other hand, local health officers, when serving the school, should approach their tasks not as medical but as educational ones. They should make every effort to conform to the school schedule and the school's purpose and resist any effort to dictate curriculum content or method in health instruction. Their services are best used in a cooperative relationship, functioning in school health education where any other physician might function.

Suggested School Health Policies makes it clear that "schools should work with Community Health Councils whenever they are established and, if necessary, should take leadership in their organization and direction." Through such media the school personnel can best tap community resources for purposes germane to school health education and, furthermore, can best be in a position to stimulate community health projects as stemming from the school.

RELATION OF SCHOOLS TO PRIVATE AGENCIES

The private health agencies and other civic or social groups having an interest in health are generally anxious to foster the development of school health education any way they can. Organizations such as the National Society for Crippled Children, the National Tuberculosis Association, the American Cancer Society, and all the others in the health agency field, as well as the parent-teacher associations, American Legion, labor organizations, and others with child health committees, are available for assistance in many ways if the proper representations are made. On local, state, and national levels those organizations are ready to assist in school health education because they recognize in the school one of the most effective media for attaining their own educational objectives. Conversely schools are in a position to help the private agencies. The flow of assistance should not all be one way. As an example of mutual aid, the following program was developed between a school and a local tuberculosis association:

For the association, the school

1. Cooperated with the agency in working out a case-finding program
2. Presented the program of the association to all students and faculty
3. Served as a site for a public X-ray case-finding program
4. Sold Christmas seals as a means of support
5. Utilized tuberculosis literature from the association and made it available to all adult groups using the building
6. Publicized the agency through school and local newspapers
7. Provided educational personnel as discussion leaders at tuberculosis conferences

For the school, the association

1. Sponsored a tuberculin testing program throughout the school
2. Sponsored a miniature X-ray program
3. Provided health instruction teaching materials on tuberculosis and kindred subjects
4. Bought several sets of books on health for the library
5. Subsidized selected teachers to attend health education workshops at a nearby university
6. Provided monies and speakers on tuberculosis for school and community meetings
7. Arranged to hospitalize active but indigent cases of tuberculosis found among the students

Such reciprocal relationships are mutually profitable. Whether from private or official agencies the students can profit educationally and healthfully from such community contacts. The possibilities are many and varied. Here follow some citations of actual projects developed in schools:

1. Held a conference on cancer education sponsored jointly by school and local chapter of American Cancer Society
2. Stimulated the establishment of a cancer clinic by local health authorities
3. Organized and provided the site for a baby clinic for low-income families in the community
4. Cooperated fully in the preschool roundup of the parent-teacher association
5. Acquainted students by field trips and discussion of the operation of all civic functions relating to health

6. Made possible the use of the X-ray machine donated to the county health department by the Tuberculosis Association in surveying all young people in the district
7. Helped in the selection of worthy cases for a charitable fresh-air summer camp
8. Received from the Junior Chamber of Commerce the benefits of a dental health program and from the American Legion an athletic program during summer months
9. Received from a local service club funds for aiding the treatment of crippled children and from another service club money for shoes for indigent children
10. Used the local theater and projection equipment for the showing of health motion pictures

These are but ten of hundreds of projects which strengthen the programs of both the community organizations and the school. They can be easily thought of and planned by an imaginative and energetic health council. The American Association of School Administrators suggests, however, that in all such community coordination certain principles of operation should be followed:

1. *The school should make full use of the facilities of available community health agencies in its education program*—The health field is one of the best in which the school can demonstrate the advantage of drawing upon community resources for instructional purposes. . . .

2. *Any plan of cooperation requires a delineation of the activities of the participating agencies and of the individuals within the agencies*—Each agency defines its field of operation and thus the boundaries of the respective fields are set. If such steps are not taken, sufficient friction may develop to cause the project to fail. . . .

3. *Any participating agency must retain administrative control of its own activities.* . . .

4. *Cooperation in the school health program requires a recognition of the professional nature of education as well as that of the health-medical sciences*—Difficulty sometimes arises in separating the educational functions of physicians and nurses from the health functions of classroom teachers. . . .

5. *There is no single best plan for coordinating the work of the community health agencies with the health program of the school*—Local factors and available personnel influence all plans. . . .

6. *In successful joint programs the democratic process of group thinking*

is important—Persons and organizations subordinate their individual interests and desires to the more important purposes of the joint project. . . .

7. *The development of an effective community health organization in a democratic society requires continued, patient, and persistent effort*—The democratic process is slow. It does not operate with the speed of dictatorship. It may, however, be more effective as well as infinitely richer in the satisfaction obtained by the free people who exercise it.

8. *As cooperative activities succeed and increase in scope, there often develops a program requiring the efforts of some one person to draw the activities together and to see that the program as a whole moves toward the general goal. . .*

RELATION OF SCHOOLS TO COMMERCIAL ORGANIZATIONS

There is a wealth of health education material now offered by business enterprises for use in school health education. Life insurance companies publish teaching aids, teachers' bulletins, actuarial data, and research studies which are of great value. Food manufacturers issue attractive materials on diet and nutrition. Soap companies and pharmaceutical corporations make available posters and brochures on cleanliness and disease prevention. Advertising agencies and publishers frequently call the attention of schools to usable materials on nearly every subject pertaining to health programs. Much of this material is good. Some of it is unscientific. Some of it is frankly biased advertising and as such is unsuitable for use in public institutions. Teachers and administrators should (1) preview all material from commercial organizations to determine whether it is offensive advertising, (2) have the scientific accuracy of the material established by medical or other scientific personnel on the school health council, (3) conform to whatever state laws or local policies have been established regarding the use of such material, (4) determine if it is educationally sound.

RELATION OF SCHOOLS TO OPPOSITION GROUPS

In probably every community there are small groups or individuals who do not believe in the merit or propriety of a school health pro-

[6] *Health in Schools*, Twentieth Yearbook of the American Association of School Administrators, 1951, pp. 423–426.

gram. They oppose the health care or instruction of children in school on personal, religious, or some other grounds and insist on their right to be heard and to have their wishes respected. Many state laws recognize the existence of such opposition by providing that no child shall be examined, for example, whose parents object thereto. Other states make the teaching in controversial areas like sex and reproduction, animal experimentation, or evolution illegal. Locally, such groups may protest certain phases of a complete program and stir up enough public opposition to defeat the purpose of that segment of the program.

In all such instances the school, perhaps through its health council, and with the official sanction of the board of education, should have a carefully thought-out policy which will make its position clear to the public. The board must recognize its obligation to protect its pupils and staff from communicable disease. It must recognize the existence of the health needs of the community and of the nation. At the same time, it will observe the rights of parents and children to their own religious beliefs as long as the exercise of them does not jeopardize the public welfare.

In health teaching, there are always the controversial areas of sex hygiene (or social living as it is better called), insanity, quackery and fads, medical care, tobacco and alcohol. Not all material in these areas is suitable for classroom use. Whatever *is* used should be accurate and inoffensively presented, and it would be well for the teacher to keep accurate notes himself on what is taught in the event of protest about it later. It is common experience among teachers that a frank and public declaration of intent, with an opportunity given to explore the pros and cons in advance of the actual teaching, will bring about a better understanding of the problem and, perhaps, avoid any public protest. In other instances teachers will find it desirable to visit doubting or protesting citizens to explain to them the necessity for the program and to give them the details of its operation. Frequently, this is greatly appreciated and alleviates any apprehension upon the part of the prospective opponent.

RELATION OF SCHOOLS TO PROFESSIONAL AGENCIES

There are a great many organizations on the federal, national, and international level which have more or less remote bearings upon local

programs but which influence policy formation and occasionally distribute funds. Some of the more prominent and influential of these are:

In government:
The United States Public Health Service
The Children's Bureau
The United States Office of Education
The United States Department of Agriculture
State and local Departments of Health
State Departments of Public Instruction
Professional associations:
The American Medical Association
The American Public Health Association
The American School Health Association
The American Association for Health, Physical Education and Recreation
The Society of Public Health Educators
The American Nurses Association
The National League for Nursing
On the international scene:
The Health Division of the United Nations Educational, Scientific and Cultural Organization
The World Health Organization
The International Union for Health Education

These agencies function in school health education in a variety of ways. Some are official and some unofficial. Some have funds for local use and others do not. Most of them will supply teachable materials or other data of local interest, and school health personnel should be familiar with the available resources of these organizations.

SELECTED READINGS

Two recent reports are of particular interest to those who are aware of the increasingly useful relationship between voluntary health agencies and school personnel. Both reports should be read for the valuable guidance and program suggestions which they give:

Planning Committee of the Inter-Agency Conference on School Health Education, *Improving School Health Through Interagency Cooperation*, 1958.
Health Education Division of the American Association for Health, Physical Education and Recreation, *How Schools and Voluntary Agencies Can*

Work Together to Improve School Health Programs, Journal of Health, Physical Education and Recreation, XXVI, No. 7 (October, 1955), 35.

Additional suggestions are:

Brownell, Clifford Lee, *Principles of Health Education Applied,* New York, McGraw-Hill, 1949.

Butterworth, Theron H., "The Future of Health Education in the Light of the Concept of the Interdependence of Nations," *American Journal of Public Health,* XLVIII, No. 8 (August, 1958), 1031–1036.

Calder, Ritchie, *Ten Steps Forward—World Health, 1948–1958,* Geneva, W.H.O., Division of Public Information, 1958.

Conforti, Joseph A., "How a Voluntary Health Agency Can Help Me as a Teacher of Health and Physical Education," *Journal of School Health,* XXVI, No. 8 (October, 1956), 249.

Chisholm, Brock, "International Health. 2. The Role of W.H.O., Past, Present and Future," *American Journal of Public Health,* December, 1951, p. 1460.

Deutsch, Albert, *The World Health Organization—Its Global Battle Against Disease,* Public Affairs Pamphlet No. 265, New York, 1958.

Dukelow, Donald A., and Hein, Fred V., "Medical Association Participation in Solving School Health Problems," *Journal of the American Medical Association,* CLV, No. 6 (June, 1954), 598–600.

Goodman, Neville M., *International Health Organizations and Their Work,* Philadelphia, Blakiston, 1952.

Hiscock, Ira Vaughn, with the collaboration of Mary P. Connolly, Marjorie Delevan, Raymond S. Patterson, and William H. F. Wharthen, *Ways to Community Health Education,* New York, The Commonwealth Fund, 1939.

Oberteuffer, Delbert, "A Challenge to the Professions," *Journal of School Health,* XXVI, No. 1 (January, 1956), 3.

Paterson, Robert G., *Foundations of Community Health Education,* New York, McGraw-Hill, 1950.

Pearse, Innes H., and Crocker, Lucy H., *The Peckham Experiment,* New Haven, Yale University Press, 1945.

Winslow, C. E. A., *International Organization for Health,* New York, The Commission to Study the Organization of Peace, 1944.

World Health, a monthly news review of the World Health Organization, Geneva.

— 19 —

The Evaluation of Services and Activities

To evaluate the worth of school health services and activities is like appraising instruction (see Chapter 9). One seeks to learn how effective the procedures are and what results they produce. The foregoing chapters in Part III have described many procedures used in school health education which, when taken as a whole, aim to determine the status of child health and to organize for its improvement. But how good are these procedures? How effective are they in accomplishing the objective for which they were designed? Do they produce satisfactory results in terms of improving the health of school children? Is what we are doing up to date? Should we be doing anything new?

Likewise, we want to know whether the patrons of the school understand what is being done and whether they believe it to be worthwhile. So questions are asked of them. Are the purposes of school health education clear? Are these purposes worthwhile? Do they make sense? Do people generally understand what the school health education program contains?

There are three approaches to the evaluation of school health services and activities. (1) It must be determined whether the program as a whole is complete—whether it has in it those features it should have. (2) It is necessary to find out whether the procedures used in the program accomplish what they are supposed to accomplish. (3) An appraisal should be made of the outcome of the action, usually in terms of the effect of the procedures upon the health of children.

For example, it is generally agreed that screening for vision is an essential ingredient of a school health program. Suppose a given school accepts this idea and screens for vision by means of the Snellen Test. It

is possible, as we have discussed in Chapter 14, that this test is exceptionally good in locating children with vision problems. An analysis of the Snellen Test would indicate the children with defective vision, but the vision problem is not solved, even with successful screening. The correction of vision handicaps must take place before the circle is closed (see 3 above). Results must be shown in improved child health. The latter, of course, is crucial. The efforts of the school may come to naught unless parents follow through on the school's recommendations.

Conditions change. Things get better, but sometimes they get worse. We know that life expectancy at birth in the United States has increased by 23 years since 1900. Who can take credit for bringing about this change? What influences have been at work?

Since 1955, there has been a reduction in the incidence of paralytic poliomyelitis among school children. Why? Because of the availability of vaccines? Who taught people to use the vaccines?

The school health education program must be judged, like all other aspects of the school's program, in terms of its results.

To evaluate effectively all aspects of a school health program thus requires many tests, surveys, checks, follow-ups, retests, and other devices. To date, the field does not provide means to accomplish an evaluation complete in every respect. New techniques are continually being developed through research and experience.

Administrators should include in the annual budget provision for evaluation. A subcommittee of the school health council could well be appointed to conduct the various aspects of the program of inquiry. *It will seek to establish principles, first,* and the following are recommended as applicable:

1. Evaluation should be continuous.
2. It should embrace all of the important functions of the school health program including instruction and activities.
3. It should be concerned both with end products and the means to reach these ends.
4. It should touch upon all health aspects of the school including curriculum, administration, buildings, grounds, equipment, finances, and community relationships.
5. Evaluation should be cooperative. All those who are affected by the evaluation should participate in it—administrators, teachers, pupils, parents, physicians, nurses, dental hygienists, nutritionists and others.

6. Evaluation should be focused upon the important values which underlie the health program of the school, and the success or failure of the program should be judged in terms of how well it meets the values held.
7. A long range evaluation program should be so planned that no one year would involve the school in a complete study of every aspect of school health education.
8. The collection of data and keeping of records in the school have no value in themselves. Only as the data aid in evaluating the true functions of school health education do they attain value.

Second, it will recognize that not all aspects of the program need be evaluated every year. An approach will be mapped out something like this:

First year
1. The disease control program
2. The hearing testing program
3. The environment of the school in relation to health and safety

Second year
1. The vision testing program
2. The program of correlation of instruction
3. The dental health program
4. The frequency and causes of absenteeism among students and staff

Third year
1. The effectiveness of the nursing and medical services, including the examinations
2. The growth and nutrition program including the lunchroom
3. The psychological services and mental health program
4. The program of direct teaching in health

Fourth year
1. The physical education program including the care of athletes and the program of athletics in relation to health
2. The emergency care program including first aid
3. Community relationships
4. The program of integrated instruction as it bears on health
5. The use of teaching aids in health instruction

Fifth year
1. The administrative and financial structure of the health program

2. The effectiveness of personnel
3. The relation of the school program to community practitioners and agencies
4. The school health education program as a whole—as a functioning unit

Such a schedule of evaluations would be predicated upon a continuous study of the health needs of the children in school and the communities from which they come. Alterations in program aimed at greater effectiveness can only come when needs are known and met.

Third, the committee, having agreed on basic principles and established a tentative schedule from which to work, *will then give some thought to objectives.* It should have before it the objectives of the school health program as a whole so that the objectives of specific parts of it can be seen in relation to the larger problem. Emphasizing the educational aspects of a school health service or activity program, the committee might understand these to be the general educational objectives of the program as a whole:

For the child:

1. A favorable attitude toward professional medical and dental care.
2. An appreciation of the value and importance of early medical advice and the dangers of self-medication and over-the-counter drugstore prescribing.
3. Information concerning the transmission of communicable diseases, methods of protection, and proper health behaviors relative to their control.
4. The development of good health habits. . . .

For the parent:

1. It should produce a better understanding of the child not only with respect to his physical needs, but also his mental and social needs. . . .
2. It should inform parents concerning the medical facilities of the community and how they can best be used. It should also teach both parents and children how to appraise the various types of so-called medical facilities, or, in other words, how to separate the quacks from reputable and acceptable facilities.
3. It should develop among parents a favorable attitude toward the school, so that they will think of it as a place where they can go for friendly advice concerning their child. . . .
4. From the program, parents should develop a favorable attitude toward all preventive measures, such as, immunizations and vaccinations, early care of colds, etc. . . .

For the teacher:

1. A better understanding of the handicaps of children in general and her children in particular. . . .
2. An improved knowledge of the meaning of certain physical symptoms and behaviors which she may observe in her children.
3. A more thorough understanding of the home conditions of the children whose homes are visited by any of the school health personnel. . . .
4. A knowledge of how to utilize the services of the other members of the school health staff in understanding her own children. . . .

For the nurse:

1. An appreciation of the child as a personality to be educated as well as an organism with a defect of some kind.
2. That there are scholastic, social, and psychological problems which interrelate with the physical.
3. That nursing in education is an integral part of a whole and not a special unrelated service.
4. That records on children are a means to developmental ends and not ends in themselves.

For the principal:

1. An appreciation of the need for administrative adjustment for children who are deviates from the normal.
2. An appreciation of the limitations and possibilities of the school medical examination and related services.[1]

With some such arrangement of general objectives in mind the committee could then turn to the consideration of specific objectives for the specific phase of the program to be evaluated now.

What does the vision testing program aim to do? Possibly (1) to get a preliminary but accurate reading on the vision of all children every year, (2) to screen out all children with 20/40 vision or worse, (3) to arrange teacher-nurse-parent conferences where necessary to recommend corrective or compensating action, (4) to secure corrections in every needed case, (5) to adjust room environment (seats, lighting, reflectors) for benefit of vision, (6) to indicate need of special sight-saving training.

The committee would proceed to get the answers to the question: "How near does the vision testing program come to attaining these six objectives?"

[1] Adapted from George T. Palmer and Mayhew Derryberry, "Appraising the Educational Content of a Health Service Program," *American Journal of Public Health,* May, 1937, p. 476.

Fourth, the committee will select its evaluating techniques in relation to the element of the program to be appraised. Techniques successful in finding the answers for the vision program would not be applicable, perhaps, in evaluating the school lunch. The committee will choose from statistical analyses, surveys, testimony of participants or observers, rating scales, or other suitable devices. It will make sure that the measurements attained were (1) so constituted that the results obtained by one evaluator will be the same as those by any other evaluator in the same situation; (2) indicative of the total objective rather than a measurement only of the particular item included; (3) truly indicative of the degree to which the objectives have been achieved.[2]

With these principles and objectives in mind an evaluator or committee can proceed to appraise the quality or results of a program. He has but to select or create his evaluating instrument.

In selecting instruments or techniques for purposes of evaluating the program, or specific parts of it, the evaluator will want to distinguish between tests used *in* the program and tests used to *evaluate* the program. For example, the Snellen Test screens for vision. It is, in a sense, an evaluation of vision. But another test would have to be devised to ascertain how effective is the vision screening program that uses the Snellen Test. Perhaps a test involving vision examinations by teams of oculists or optometrists would tell us how well the Snellen Test does its job, or, better, how well the administrators of the test are using it. Distinction must be made between tests used in the program and tests used to find out how effective the program tests are.

Evaluators need, therefore, to be careful in the selection of their instrument. They will choose from some such list as the following, and the choice will be made in terms of the suitability of the evaluating instrument for the task to be accomplished.

FOR EVALUATION OF TOTAL PROGRAM

American Journal of Public Health Yearbook, *Suggested Standards for Health Services in Secondary Schools,* XLII (May 5, 1952).

American Public Health Association, *Guide to a Community Health Study,* Preliminary Draft, New York, 1954.

American Public Health Association, School Health Section, Committee on Evaluation of School Health Programs, Wesley P. Cushman, Chairman, *Evaluate Your School Health Program,* 1955.

[2] *Ibid.*

American School Health Association, Report of the Joint Committee on Evaluation of School Health Programs, "Evaluate Your School Health Program," *Journal of School Health,* June, 1956, p. 167.

Cochran, William G., *Research Techniques in the Study of Human Beings,* Milbank, Memorial Fund Quarterly, XXXIII (1955), 121–136.

Connecticut Advisory School Health Council of the Connecticut State Department of Education and the Connecticut State Department of Health, *A Suggested Self-Study Guide for Developing School Health Policies,* Bulletin 78 (June, 1956).

Dearborn, Terry H., *A Checklist for the Survey of Health and Physical Education Programs in Secondary Schools,* Stanford, Stanford University Press, November, 1951.

Eastern District Association of A.A.H.P.E.R. (originator of the project); Officers of the Health Education Division; and the Joint Committee on Evaluation of the A.A.H.P.E.R., School Health Section (A.P.H.A.), and the American School Health Association, "Evaluation Instruments in School Health Education," *Journal of Health, Physical Education and Recreation,* November, 1955, p. 13.

Elliott, Eugene B., *A Checklist for Surveying the Secondary School Health Program,* Bulletin 346 (1946), Department of Public Instruction, Lansing, Mich.

Fast, Charles, and Williams, Sara, *Health Education Evaluation Form,* Portland, Ore., Oregon Tuberculosis and Health Association, March 14, 1957.

Greenberg, Bernard G., and Mattison, Berwyn F., *The Whys and Wherefores of Program Evaluation,* Public Health Report, LXX, 136–137.

Grout, Ruth E., *Health Teaching in Schools,* Philadelphia, Saunders, 1953.

Hinrichs, Marie A., "Periodic Evaluation of Routines and Records as Milestones or Guideposts in the Progress of a School Health Program," *Journal of School Health,* October, 1958, p. 254.

Jackson, Chester O., "Let's Rate Your Health Education Program," *Journal of Health, Physical Education and Recreation,* September, 1955.

Ladimer, Irving, "An Evaluation Study of the New York City School Health Program," *Journal of School Health,* October, 1956, p. 245.

National Education Association, *Health Education,* Joint Committee on Health Problems in Education of the American Medical Association and the National Education Association, Washington, D.C., 1960.

National Education Association, *Health in Schools,* Twentieth Yearbook of the American Association of School Administrators, Washington, D.C., 1951.

New Mexico Department of Education, "School Health Evaluation Guide,"

A Handbook for Self-Appraisal of Elementary Schools, Sante Fe, N.M., 1956.

Ohio Department of Education, "Evaluating Your Health Education Program," in *A Handbook for Health Education Teachers,* Columbus, Ohio, 1947.

Ohio Department of Health and other state organizations, *A Guide to a Community Health Study,* published by the Committee on Administrative Practices of the American Public Health Association in cooperation with the Ohio Department of Health, Columbus, Ohio.

Price, Bronson, *School Health Services,* Washington, D.C., U.S. Department of Health, Education and Welfare, Social Security Administration, Children's Bureau, 1957.

Rugen, Mabel E., and Nyswander, Dorothy, *The Measurement of Understanding in Health Education,* Forty-Fifth Yearbook, Part I, of the National Society for the Study of Education, Chicago, University of Chicago Press, 1946.

Texas Education Agency, *A Checklist Appraising the Elementary and Secondary Health Program,* Bulletin 519, Austin, Tex., April, 1951.

Turner, C., *School Health and Health Education,* St. Louis, Mosby, 1959.

University of the State of New York, *Evaluation of School Health Education,* Albany, N.Y., State Education Department, December, 1952.

Wisconsin Cooperative School Health Program, *Administrator's Outline for Study of the School Health Program,* Madison, State Department of Public Instruction.

Yankauer, Alfred, "A Further Evaluation of the Astoria Plan for School Medical Services in New York City Elementary Schools," *American Journal of Public Health,* XLI, 383–387.

Yankauer, Alfred, "An Evaluation of the Effectiveness of the Astoria Plan for Medical Service in Two New York City Elementary Schools," *American Journal of Public Health,* July, 1947, p. 853.

Yankauer, Alfred, "Designs for Evaluation Needed in the School Health Services Field," *American Journal of Public Health,* XLII (1952), 655–660.

For Evaluation of Physical Plant

National Education Association, *Checklist of Safety and Safety Education,* Washington, D.C., 1939.

University of the State of New York, *Inspection and Supervision of the Health Aspects of the School Plant,* Sanitary Survey Form, Revised Edition, Albany, N.Y., State Education Department, Division of Health and Physical Education, 1948.

For Evaluation of Personal Services

"Appraisal Form for Evaluating School Health Services," Revised, 1947, *Journal of School Health,* XXVIII, No. 1 (January, 1948).

Baumgartner, Leona, Wegman, Myron E., and Wheatley, George M., "Medical, Dental, and Nursing Services for School Children," *Journal of Health and Physical Education,* November, 1947, p. 61.

Clark, James W., and Burdick, E. Douglass, Department of Health, Harrisburg, Pa., 1952.

Linn, H. H., and Helm, L. C., *Checklist Forms for Rating School Custodial Service,* Teachers College, Columbia University, New York, 1940.

Rast, G. E., "A Critique of 'School Health Services' from the School Administrator's Viewpoint," *American Journal of Public Health,* LXIV (1954), 1189–1190.

For Evaluation of Mental Health Programs

National Council of Independent Schools, *Some Inquiries Helpful in Appraising Mental Health in a School,* Boston, 1952.

U.S. Dept. of Education, Health and Welfare, *Evaluation in Mental Health,* Washington, D.C., 1955.

For Evaluation of Dental Health Programs

American Dental Association, *Dental Health Program for Elementary and Secondary Schools,* Chicago, 1947.

Knutson, John W., "Simplified Procedure for the Collection of Basic Data for Dental Program Planning and Appraisal," *American Journal of Public Health,* November, 1947, p. 1439.

For Evaluation of Nutrition Programs

National Congress of Parents and Teachers, *Checklist on Community School Lunch Project.* Available on request from your local Parent-Teachers Association.

Nutrition Education Series, *A Yardstick for School Lunches,* Pamphlet No. 4, Washington, D.C., Superintendent of Documents, U.S. Government Printing Office.

Public Health Committee of the Paper Cup and Container Institute, *Survey on School Lunch Operation,* Parts I and II, New York.

For Evaluation of Safety and Safety Education

California State Joint Committee on School Health, *Checklist for Healthful and Safe School Environment,* San Francisco, Calif., State Department of Public Health, March, 1949.

Cooperative Study of Secondary School Standards, *Health and Safety,* Washington 6, D.C.

Hixson, L. B., "A Checklist for a Safer School," *American School Board Journal,* CXXIV, No. 4 (April, 1952), 43.

National Education Association, National Commission on Safety Education, *Checklist of Safety and Safety Education in Your School,* Washington, D.C., 1953.

As the fifth and last step in an evaluation study the committee will make a report to the health council or to any other appropriate body. This report should include the following:

1. A clear description of the program or program element which was appraised.
2. A description of how the evaluation was made, including complete revelation of the techniques and procedures used.
3. The detailed specific results, the findings, with the original data available (but not necessarily in the report) if the parent body wants them.
4. A statement of general results or conclusions from the evaluation. (This will include a citation, if necessary, of the deterrents found, such as lack of funds, lack of personnel, inadequate referral services, misinformed administration, parental indifference.)
5. A series of clear recommendations for improvement of the program arranged from the simple to the complex and from those possible now to those possible only in the future.

Evaluations are attempted to determine how close practice is to objective. Where money is being spent, where time is being consumed, and where the health of children is at stake, the program activities must be proved useful, and they must be plainly related to a clearly stated aim.

Yes No 17. Do you have any unusual condition of the reproductive organs? What?
Yes No 18. Do you have flat feet? Painful? Yes No
Yes No 19. Do you have any chronic injury or ailment?
Yes No 20. Do you have any heart or circulatory trouble?
Yes No 21. Do you have high blood pressure?
Yes No 22. Are you slow in recovering from strenuous exercise?
Yes No 23. Can you see your heart beat by looking at your chest after vigorous exercise?
Yes No 24. Are you unusually short of breath after climbing a flight of stairs?
Yes No 25. Do you have anything wrong with your vision?
Yes No 26. Do you have anything wrong with your hearing?
Yes No 27. Have you ever been confined to your bed because of illness?
For what?
When?
Yes No 28. Have you ever been confined to a hospital? For what? When?
Yes No 29. Do you have any physical or health condition which will restrict or limit your physical exercise?
What?

Signed
(Parent or Guardian)

FORM II

PHYSICAL INSPECTION FORM

Name Age Class
Date Physical Education Period

1. General appearance
 Too thin
 Too heavy
 Normal
 Fatigued
2. Alignment of spine
 Shoulders level
 Unusual curve
 Pelvis level

3. Legs and feet
 - Normal
 - Flat
 - Veins
4. Scars—Marks
5. Skin
 - Normal
 - Infection
6. Abnormal shape, contour of any part?
7. Nervous habits, tic, spasm
8. Any deviations from normal?

FORM III

OBSERVATION CHECK SHEET

Name Grade Date
Physical Education Class

. . . Visible palpitation of heart during and after exercise
. . . Inability to recover from fatigue
. . Slow in recovery after exercise
. . . . Undue panting, breathlessness
. . . . Extreme pallor
. . . . Undue coughing
. . . . Unusual pains
. . Unusual swellings
. . Skin infection
. . . Sore throat
. . Flushed, feverish appearance
. . . . Nasal discharge
. . . . Swollen eyes
. . . . Discharge from eyes
. . . Discharge from ears
. . . . Undue loss of weight
. . . Muscular spasms, tics
. Unusual limitation of movement
. . . .
. . . .

Remarks:
.

INDEX

Absences, 39
Academic courses, 10
Accidents, 28, 434, 439
 among school children, 29
 location of, 30
Accidental deaths, 28
Action, 7, 55
Administration, 144, 148, 453, 462, 477
Adult judgment, 95
Age-height-weight, 387
Agency funds, 485
Alberty, Elsie J., 204, 208, 209, 224
Alberty, H. J., 206, 207, 213
Alcoholism, 16
American Heart Association, 26, 112
American Cancer Society, 343
American Psychiatric Association, 355
American School Health Association, 467
Anatomical approach, 101
Appraisals, 282, 279
 bibliography of, 320
 evaluation of, 317
 frequency of, 305
 of instruction, 274
 kinds of, 286
 physical education, 284
 of programs, 274
 purposes of, 282
 scope of, 280
 success of, 300
Architecture and health, 426
Astigmatism, 409
Athletes, health of, 500
 local physicians and, 502
"Athletes' heart," 347
Athletic classification, 499, 505
Athletics, health standards for, 503
Atomic science, 3
Attendance, 325
Attitudes, 51
Audiometry, 418, 419
Audio-visual aids, 242
Automation, 22

Basic problems, 14
Baumgartner, Leona, 281, 447
Beatty, W. W., 161
Bechtel, P. C., 129
Beck, Eugene, 181
Behavioral sciences, 4
Beyrer, Mary K., 268
Birth rate, 31
Blind, 415
Board of Education, 451, 484
Board of Health, 451, 484, 516
Brown, Maud, 311
Bruner, H. B., 271
Burney, L. S., 341
Byrd, O. E., 86, 124

Cancer, 25, 343
Cardiovascular disease, 25, 26, 27
Carroll, C. R., 180
Caswell, H. L., 175
Case finding, 328
 for handicapped, 399
Cerebral palsy, 350
Changing attitudes, 69
Chapman, Don, 186

Characteristics of a good course, 122
Chicago Public Schools, 104, 114
Child care, 155
Chorea, 349
Ciocco, Antonia, 43
Class composition, 130
Classification for P. E., 499
Classroom management, 364
Classroom teacher, 469
 and screening, 470
Clinics, 516
Closing schools, 332
Coeducation classes, 130
Colds, 340
Columbus Public Schools, 118
Commercial resources, 247, 520
Committee on Preventive Psychiatry, 169, 177, 359, 365, 370
Common learnings, 193
Communicable diseases, 19
Community, and the school, 11
Community agencies, use of, 143
Community coordination, 519
Community Health Councils, 517
Community life, 11
Compensation, 284
Compensations, 403
Competitive sports and health permits, 500
Complacency, 59
Compulsory attendance, 7
Conference on Physicians and Schools, 304, 456, 513
Confidential information, 302
Controversial areas, 169, 520
Core curriculum, 84, 192, 206, 222
Cornacchia, H. J., 125
Correlation, 76, 174
 administration of, 190
 with biological sciences, 178
 business education, 182
 curriculum, 176
 with driver education, 180
 examples of, 181
 history, 182
 with home making, 181
 limitations of, 188
 mathematics, 185
 with physical education, 178
 with physical sciences, 179
 problems of democracy, 186
 with social sciences, 179
Costs, 446, 481, 483, 485
 of medical care, 482
 of salaries, 485
 of school health services, 482
Counseling services, 367
Course, definition of, 81
Course of study, 81
Cowell, C. C., 254
Creative vitality, 6
Creativity, 19
Critical incidents, 87
Crucial problems, 93
Curriculum, 84, 117, 118, 172
Cushman, W. P., 82, 263

Death rates, 23
Debate, 137
Defining the problem, 138
Degenerative diseases, 24
Dental caries, 395
Dental case finding, 293
Dental examinations, 393
Dental health, bibliography for, 396
Dental hygienist, 39, 474
Dental programs, 388, 390
Dental prophylaxis, 392
Dental societies, 512
Denver Hearing Center, 418
Derryberry, M., 264
Developmental tasks, 199
Developmental view, 39
Didactic methods, 131
Diphtheria, 336
Direct teaching, 75, 122
Disease, 323
Disease control, 20, 324, 335, 337, 479
Diseases of middle age, 24
Discussion questions, 62
Downs, M. P., 418
Draft rejections, 16, 491
Dualism, 38, 44
Dukelow, D. A., 367

Education, Boards of, 484, 486
Education, in health, 21
 science, 45
Educational Policies Commission, 10
Effective teaching, 51
Ego motives, 56
Elementary teacher, 234

Emergency programs, 434
Emotional problems, 16, 404
Employees, 479, 480
Employment, 479
Environmental and health, 35, 90, 425
Epidemic control, 331
Equipment, 488
Etiological approach, 101
Eugenics, 31
Evaluation, approach to, 524
 curriculum, 268
 dental health programs, 532
 instruction, 253, 273
 mental health programs, 532
 methods of, 257
 nutrition programs, 532
 personal services, 532
 physical plant, 531
 procedures, 255
 purposes of, 254
 resources for, 274, 529
 safety programs, 532
 services, 524, 526
Examination records, 305
Examinations, of athletes, 298
 physical education, 298
Exceptional children, 402
Exclusion, 329, 337
Extrinsic material, 63, 105

Family life education, 113, 151, 251
Family planning, 154
Family physicians, 303, 515
Farnsworth, D., 359
Farsightedness, 409
Federal government, 448
Federal laws, 474
Felt needs, 58
Field experiences, 141, 142
Field theory, 70
Films, 146, 242
Financial support, 483
Finding problems, 108
Fitness, 493, 494
Fletcher, C. S., 58
Fluoridation, 393
Follow-up, 314
Food and diet, 34
Food handlers, 336, 351
Foot-candle, 408
Forum, 137

Foshay, A. W., 175
Frankl, Viktor, 56
Fumigation, 334

General education, 9, 10, 193
Generalizations, 71
Germ warfare, 4
Giles, H. H., 46, 51, 67, 73
Goals, 51, 56
Government agencies, 522
Grade placement, 125
Grand Rapids, 456
Group discussion, 135, 136
Group motivation, 65
Group needs, 10
Growing up, unit on, 109
Growth, 291
Gutman, R. E., 388

Haignere, Joyce, 116
Hallock, Grace, 411
Hamburg, Marian, 348, 352
Handicapped children, 42, 398
 educational program for, 400
 medical treatment of, 400
Hardy, W. G., 419
Havighurst, R. J., 89
Healing cuts, 34
Health, Boards of, 484
 choices, 55
 definition of, 47
 in education, 3
 eligibility, 500
 function, 38
 as means, 53
 as motivation, 52
Health agencies, 517
Health attitudes, 74, 265
Health committees, '54, 513
Health consciousness, 54
Health councils, 11, 461, 456, 454, 516
Health education, as general education, 8, 9
 nature of, 12
 personal development, 9
 physical education, 494
 physical education personnel, 498
 purposes of, 9, 14
 as a subject 9
Health examinations, 294
 for athletes, 503

Health history, 294, 307, 505
Health information, reliability of, 268
Health Information Foundation, 106
Health instruction, 480
 aim of, 73
 objectives, 75
 three patterns, 75
Health inventory, 312
Health knowledge, 74
Health observations, 505
Health officers, 452, 517
Health problems, sources of, 85
Health records, 306
Health standards for competitive sport, 502
Health services, 32, 280
 objectives of, 282
Health status, 15
Health suite, 429
Health of teacher, 486
Hearing, 416
Hearing appraisals, 418
Hearing classifications, 417
Hearing referrals, 421
Hearing, school program for, 422
Heart disease, 27, 346, 348
Hein, F. V., 367
Henry, N. B., 193
Hempstead, New York, 459
Historical approach, 100
Hixson, C. G., 299, 505, 535
Hoyman, H., 151
Hypertension, 27
Hypochondriacs, 54

Infant mortality, 31
Influenza, 21
Immunization, 20, 327, 403
In-service preparation, 235
Integrating experience, 200
Integration, 76, 192
 bibliography for, 231
 curriculum, 205
 definition of, 192
 examples of units, 208
 health education, 194
 and the individual, 195
 programs, 228
 and the specific course, 202
 unit development, 218

Interests, 57
 complacency and, 61
 rank of, 97
International agencies, 522
Intrinsic material, 63
Isolation, 329

Janitor, 473
Johnson, LeRoy, 394
Joint Committee, 201, 286, 253, 295, 297, 351, 438, 441, 455, 468, 469

Kilpatrick, W. H., 59
Knowledge, 4
Knutson, Andie L., 87, 105, 273
Kotinsky, Ruth, 416

Lantagne, J. E., 97
Lawrence, Ruth, 317
Learning and total organism, 73
Lecture, 133
 evaluation, 4, 134
Legal aspects, 474
Liability, 441
Life adjustment, 163
Lighting levels, 408
Literature, analysis of, 91
Local government, 450
Local laws, 480
Local organization, 454
Lurry, L. L., 203, 208, 209, 224

McCall, J. B., 212
McCanner, Jean, 105
McCloy, C. H., 492
Magic, 36
Malfetti, J. L., 87, 98
Malnutrition, 387
Mantoux test, 341
Marienfeld, C. J., 346, 349
Marriage courses, 151
Material, range of, 124
Maternal mortality, 31
Medical adviser, 463
Medical examinations, 294
Medical services, 33, 465
Medical societies, 512
Meier, F. A., 188
Menninger, W. C., 372
Mental diseases, 16, 356
Mental health, 38, 163, 249, 354

bibliography for, 167, 374
classroom experience, 169
definition, 355
environment, 360
guidance programs, 164
instruction in, 369
physical education, 372
referrals, 368
screening for, 365
student problems, 164
of teachers, 362
teaching units for, 165
Mental health clinics, 373
Mental health objectives, 358
Mental illness, symptoms of, 356
Method, nature of, 131
Methods, availability of, 132
Metropolitan Life Insurance Co., 42, 182
Miens, Richard K., 133
Minneapolis Health Suite, 429
Minnesota Department of Health, 103
Misinformation, 148
Monism, 44
Mooney, Ross L., 13
Morbidity statistics, 89
Mortality statistics, 89
Motivation, 52, 64
and adventure, 67
economics, 68
emotion, 67
experience, 111
personal worth, 67
rewards, 149
time, 68
Muscular dystrophy, 350

Narcotics, 16
Nassau County, New York, 461
National Safety Council, 28, 30, 439
National Society for the Prevention of Blindness, 407
Nearsightedness, 409
Needs, 8, 10, 57
Nervous diseases, 16
Neuropsychiatric disorders, 17
New York Appraisal Study, 317
Nuisance diseases, 338
Nurse, 467, 528
examinations, 468
administration, 468
classroom teacher, 469
Nurses' aides, 471
Nutrition, 34, 35
Nutrition and health, 125
objectives, 379
policies, 386
programs, 378
unit on, 108
Nutrition instruction, 386
Nutritionist, 474
Nyswander, Dorothy, 267

Objective tests, 262
Objectives, 7
Observation, 286
check sheet, 537
Official agencies, 245, 521
Ojemann, R. H., 371
Omission of problems, 149
Opposition groups, 520
Optimum health, 197
Organizing for learning, 78, 102

Panel discussion, 137
Parent inventory, 292, 312
Parent relationships, 509
Parental testimony, 87
Parents, and administration, 510
follow up, 510
Partially sighted, 415
Pasamanic, B., 356
Patch test, 341
Pauls, Miriam, 419
Peckham Community Center, 511
Periodicals, 240
Personal history form, 535
Personnel qualifications, 453
Personnel relationships, 498
Physical education, 298, 490
health, 495, 498
classification for, 310
puposes of, 495
teachers, 472, 495
Physical examinations, 92, 294, 477
Physical fitness, 492
Physical health, 38
Physical inspection form, 536
Physicians and physical education, 499
Play and mental health, 492
Poliomyelitis, 336
Population, 15
Pre-marriage problems, 154

Prenatal care, 403
Prescott, D. A., 9
Price, Bronson, 40, 319, 482
Private agencies, 517
Privileged communication, 302
Prizes, 149
Problem area, 82, 207
Problem categories, 124
Problems, 57, 82, 85
 by grades, 126
 sources of, 11
 population, 15
 popularity, 95
Professional associations, 521
Program, nature of, 12, 13
Psychogenic maladjustments, 16
Psychological approach, 100
Psychological counseling, 164
Psychological problems, 164
Psychological warfare, 4
Ptosis, 22
Public health services, 33
Pure Tone Sweep Test, 418

Quackery, 34, 47
Quillen, Dean I. James, 19

Raup, R. B., 60
Readiness for sports, 504
Readmission, 331, 352, 438
Referrals, 330
Released time, 437
Resource persons, 223
Resource unit, 83
Resources for teachers, 236
Respiratory disease, 287
Rewards, 149, 150
Rheumatic fever, 21, 349
Rheumatic heart disease, 27
Rugen, Mabel, 267

Safety program, 439, 473
Salaries, 485
Sanitary engineer, 474
Sanitation, 479
Schneider, Robert E., 82
School accidents, 30
School bus, 440
School and community relationships, 508
School day, 425
School health, and education, 446
 voluntary agencies, 518
School health education, functions and goals, 5, 6
School Health Policies, 332, 509
School lunch, 380, 483
School nurse, 311, 467
School physician, 456, 463, 512
Schools and physicians, 512
Science, development of, 3, 4
 synthesis of, 4
Science and education, 45
Scientific information, 8
Screening, 290, 291, 293, 319, 339
 without physicians, 305
Seaborg, G. T., 20
Security, 57
Sedentary living, 22
Segregated classes, 130
Selecting the problem, 78, 96
Selective Service Act, 491
Sex education, 151, 159, 251
 approaches to, 152
 preparation for, 161
 segregation for, 163
 student needs, 153
 units for, 156
Sex ratio of mortality, 23
Shaffer, T. E., 279, 298, 303, 502
Sick leave, 487
Sight, conservation of, 410
 foot-candle, 408
Sinnitt, Edmund W., 44, 56
Skin diseases, 287, 344
Sliepcevich, Elena M., 180
Small pox, 336
Smith, Henry P., 70, 134, 198, 264, 361, 492
Snellen test, 410, 411
Snyder, W. V., 363
Social living education, 151
Socratic methods, 132
Special service teachers, 472
Specific course, 122
Specific to general, 70
Speech supervisor, 474
Spock, B., 515
Standards, 476
State Government, 449
State laws, 475, 477, 484, 517
State standards, 475

State supervision, 476
Stratemeyer, Florence B., 58
Streptococcus, 349
Student experiences, 103
Student judgment, 94
Student planning, 123
Student problems, 123
Student questions, 85, 140
Symonds, P. M., 72

Teacher preparation, 233
Teacher resources, 233
Teachers, health of, 486
 mental health of, 362
Teachers' values, 69
Teaching aids, 146, 242
Teaching methods, 131, 432
 bibliography for, 172
Teaching unit, 83
Television, 147
Tensions, 22
Textbooks, 145, 237
Time allotment, 128
Topical fluoride, 393
Trade associations, 520
Traffic safety, 440
Tranquilizers, 18
Tuberculin testing, 341
Tuberculosis, 21, 340
 case finding, 341
 employees, 335
 observation for, 342
 unit on, 106
Tucker, Edythe, 143

Unit, activities for, 106
 content, 105
 conclusions, 114
 definitions of, 83
 development, 218
 evaluation of, 116
 objectives of, 104
 statement of problem, 103
 working parts of, 102
Unity, 44
University schools, 197
Unofficial agencies, 517
Unscientific material, 148
Utterbach, W., 136

Vallejo, California, 459
Venereal disease, 345
Vision, 405
 appraisals, 407, 409
 handicaps, 406
 records, 414
 referrals, 413
 services, 406, 407
Vital subjects, 59
Voluntary agencies, 245, 517

Western civilization, 3
Wheatley, G. S., 411
Will-to-meaning, 56
Wilson, C. C., 315
Wilson, Marjorie, 347
Wisconsin health program, 306, 316
Wisconsin health record, 306
Witmer, Helen, 416
World health organization, 8, 47, 103, 131, 133, 522
World War II, 491
Worthington, Ohio, 355, 461

Yankauer, A., 317